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It is quite needless for me to mention that medicine as a profession is an essential part of the affairs of society. The physician or his counterpart has existed for ages; even among the savage tribes there has always been one to attend the sick and to care for the injured—yes, one to frighten away evil spirits, the medicine man. The health and well being of the people must be maintained and improved, and it becomes the duty of the medical profession to assume this great responsibility. In playing this all important role in life, the doctor has always enjoyed an elevated position in society; a position of trust; a position of confidence and respect. By the nature of his professional relationships, he necessarily enters into the personal life of his patients. He is present to usher the newcomer onto the stage of the theatre of life and he is present when at last the act is complete and life passes on whence it came.

The good old country doctor, who had to know everything in all branches of medicine and surgery, to diagnose, treat and even cure all maladies, is with us no more. He had to officiate at the births, assist in the baptismals, treat the children and grandma too; he was there to comfort in the hour of burial; he had to know the news of the day; he had to advise on family and neighborly disputes; he had to know when to plant crops and when to reap the harvest; he had to counsel on educational questions; he had to know who was the best candidate in the political campaign; he had to receive and hold sacred the intimate personal secrets of his patients; yes, he had to prescribe for the dog, the pigs, the horse, cow or cat. He worked long tiresome hours; he worked with a feeling of responsibility, a feeling of duty; he worked without thought of pay; he worked with the love of God in his heart. His compensation was the thought of a service well done and a contribution to his fellowmen. He was kind and he was true to his trust; so much he was called upon to do and he did it so well. His patients loved him, revered him, but this magnificent character has passed from society. He has ceased to exist, and with his passing has gone much of the beautiful atmosphere surrounding him.

As science has advanced, bringing newer discoveries in disease and treatment, the scope of medical practice has so advanced that one cannot be versed in the many branches of medicine, so with the change has come the age of specialization. Rather than a little knowledge about much, the idea is to become deeply and thoroughly proficient in a specific branch of medicine. This has brought to us the specialist, the modern concept of the practice of medicine. His relationship with his patient may not be so intimately personal, but a more efficient service is rendered, for he has at his command the improved instruments of precision to aid in investigations leading to an accurate diagnosis. With this also has come the modern hospital with its laboratories, its improved facilities for rendering aid to the sick, its advanced nursing standard, all

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insuring a more intelligent handling of the patient.

It is not often realized that industry, commerce and agriculture owe much to the investigative genius of medical men; however, one need not travel far to have this brought vividly before him. Here in our own State of Louisiana, on the banks of the Mississippi and elsewhere, gigantic industries have arisen and flourished. Why? These could not have been possible but for adequate sanitary engineering and control of disease. There was a time when this community, as well as the entire coastal region of the South, truly existed in dreaded fear of many then fatal diseases, chief among which were, typhoid fever, diphtheria, malaria, smallpox, bubonic plague and yellow fever. Through medical research leading to the discovery of the causative factors and proper treatment of these diseases, coupled with adequate sanitary measures, this fear was lessened. More than this, discovery of the causative agents made it possible to devise adequate protection against infection with these germs. The individual could be immunized against the disease. This has eliminated all fear. Today it is relatively a rare occasion that any one of these diseases is seen in our community. The eradication of these dreaded maladies has made it possible for Louisiana to become an active industrial and agricultural section in which its people may enjoy happily all its natural blessings rather than to remain here as a disease infected land feared by all mankind. Medicine is dependent upon industry and industry is dependent upon medicine; so hand in hand they must march together along the highway of life.

Not so long ago those outside the immediate scope of medicine were quite ignorant of facts relating to their bodies and their health, but through publicity and education, people have become more inquisitive, they have penetrated the veil of mystery surrounding themselves. They want to know more; they desire to be advised intelligently of their ailments, of their treatment and how to prevent a recurrence of their condition. This information is rightfully their due. Along with this free discussion of things as they are, both the profession and the public have become the targets for exploitation by writers, jokesters, and advertisers of various remedies. Many of the remedies are "cure alls", good for anything from dandruff to ingrowing toe nails and everything between. Many of the writings are tainted with propaganda endeavoring to create a feeling of distrust in the profession, to create the idea the people are not getting adequate medical care, and that governmental interference would and will remedy such a defect. Much has been written about the cost of medical care, directing the remarks more or less at the physician. It may be said here that he is not to be charged alone with medical cost. In many instances the doctor receives nothing, whereas, the hospital and nurses receive pay for their services. It must be remembered that it costs money to maintain and operate a hospital and the cost must be bourne by those patronizing the institution. Let us stop for a moment to analyze the cost involved in the case of an individual entering the hospital to be operated for one of the more common complaints, chronic appendicitis or hernia.

Private room 7 days at $6.00	$42.00
Laboratory fee	7.50
Operating room fee	15.00
Medicines, infusions, etc.	5.00
To hospital	69.50
Meals for nurses 2 days	3.00
	72.50
Nurses for 2 days	36.00
	$108.50

In such a case the average surgical fees will run from one hundred to one hundred and fifty dollars. Let us say it is $150.00, making a total cost for the hospital, the nurses and the doctor of $258.50. This figure may be reduced $45.00 by elimination of the private room and the nurses, making a total cost of $213.50. If the doctor's fees is $100.00 then the total cost would be $163.50. Even this may seem a high figure for medical care, chiefly because one feels he has been imposed upon by being sick, so that any figure will seem high for medical care.

However, one does not hesitate to go into debt for an electric ice box, an electric washing machine, an electric sewing machine, a radio or an automobile, anyone of which exceeds the above minimum cost for an appendectomy or a herniotomy. One considers it unfair to place a mortgage upon himself for health's sake. We, all of us, never figure illness in the monetary considerations of our lives. Each believes sickness will not be visited upon him, therefore, no item for illness is included in the budget. The modern way of life is to indulge oneself in all things desired, forgetting the probability of a rainy day ahead. Little does one think a pack of cigarettes a day amounts to $84.00 per year and if three in a family smokes a pack a day each, and this is the average, the annual cost will be $252.00. That figure will more than offset the average annual cost of medical care for the family. Of course, the difference is, we want the cigarettes, while illness was not of our choosing. One does not gripe about the cost of the thing he wants or enjoys.

The physician is criticized for the utilization of the so-called sliding scale of charges for the same service rendered two different people. In the first place it is not possible to evaluate adequately in terms of money the service rendered for an ailment. This evaluation is relative. In general, a physician estimates his time, his physical and mental effort and the effect of the treatment given, and arrives at a figure which experience has shown to be fair. Then the patient's financial ability to pay is considered and in one hundred cases to one the charge is reduced and not elevated. Different physicians place different values upon their services for similar conditions. In this he considers his training, his knowledge of the subject, his technical skill and the results obtained. Once the standard is set it is very rarely scaled upward. It has been my experience, the more vexing the case, the more ill the patient, the longer the period of treatment, the more exacting the patient or relatives, correspondingly does the compensation slide down the scale. Of course there are a few isolated cases of seemingly large fees charged which have come to the public attention because of legal publicity. These are few and far between, but these the public remembers vividly, while the thousands of cases where no charge is made or the fees not collected are considered routine and not worthy of thought.

Today the conditions wrought upon us by the war have involved the physician just as they have entangled all other fields of activity. Many doctors have enlisted their services in the armed forces, thus reducing by nearly one half the number of physicians for the care of the civilian population. This state of affairs will add a burden to the doctor and will require patience on the part of the public. Both must be cooperative and indulgent. It is gratifying to announce that Louisiana furnished 214 per cent of her 1942 quota of physicians to the armed forces. With this changed condition, the service may not be as promptly rendered, but should be just as efficiently administered. The doctors, the hospitals, the nurses and the public must cooperate.

The public must not call physicians unnecessarily, must not wait until night to call, must not request to go to hospital for convenience or for trivialities, and once admitted into the hospital must leave as soon as possible.

The hospitals must facilitate their services so as to reduce the stay in the hospital, must eliminate free cases from pay institutions so that these beds may be available for patients able to pay for service. These free cases should be cared for at the charitable institutions.

The nurses must be willing to work longer hours and exert every influence to facilitate the work of the hospital and physician.

The doctor must work longer hours; he must discourage unnecessary admittance into hospitals, he must endeavor to get patients out of the hospitals in a minimum time, and he must not request non-essential work on patients in the hospital.

Such effort and cooperation will give a more adequate distribution of medical care and service.

Interference in all business seems to be the policy of the present administration in Washington and some suggestion has been hinted that a socialized governmental form of medicine may be advocated. In fact, it is well known that several experiments are in progress now. I do not know about you, but I am not a socialist and never will be one. We are told of state medicine in Europe as an example of its working. Well, we, over here, would be better off if we had less or no part of what they have in Europe. We have too much of it now. Let us not get anymore. It seems they have made pretty much of a mess out of it all. Let us work out our own destiny. Those who wrote the Declaration of Independence and formulated the constitution of the United States did a good job. They gave us a Democracy and we have gone far afield. Let us have it back. At any rate there will be some changes in the practice of medicine to meet the changes in our method of life. These changes definitely should not lean toward government control of medical practice. Such is not the American way of life. There could be no better way to deaden the spirit of competition, the spirit of investigation, the spirit which helps one to endeavor to be better, the spirit to create something new; all of these things are essential to advancement.

In this time of the great emergency all must cooperate to meet necessary changes, but a unified organization must exert every effort to shape these changes, plans and policies into less obnoxious forms. A strong economic organization must be maintained. The medical society must play its part, it must enlarge its scope of activity and view a widened horizon of operation, taking a more genuine interest within its own field.

The State of Louisiana has an excellent medical practice act. In fact, it is one of the finest in the country. It has kept the public free from exploitation by quacks and cults. Louisiana enjoys a good medical profession. Let us keep it that way. The medical profession will do its part by the public, it has always been conscious of its duties and responsibilities and it will carry on.

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HYPOGASTRIC SYMPATHECTOMY WITH SPECIAL REFERENCE TO THE SURGICAL ANATOMY OF THE SUPERIOR HYPOGASTRIC PLEXUS*

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In 1925, Gaston Cotte introduced the operation of resection of the superior hypogastric plexus for the relief of dysmenorrhea, and other types of pelvic pathology, and pain.[1,2] The procedure was subsequently popularized, and indications for its use extended by many contributions, particularly those of Cotte[3] and Leriche.[4,6] The successful extirpation of the superior hypogastric plexus led to its widespread adoption for the relief of pain arising from such varied pathologic conditions as: (a) inoperable carcinoma of the pelvic viscera; (b) intractable primary dysmenorrhea; (c) cord bladder; (d) intractable cystalgia; (e) spasm of the bladder neck; (f) obstipation of rectal origin; (g) Hirschsprung's disease; (h) pruritis vulvae; (i) vaginismus; dyspareunia; (k) sclerocystic degeneration of the ovaries; (l) kraurosis vulvae; (m) severe persistent postoperative pelvic pain, and pelvic and abdominal pain of obscure origin (see table 1).

TABLE I

Resection of the superior hypogastric plexus has been employed in the following:

A. In patients with no demonstrable pathologic changes in the pelvis.
   1. Intractable functional dysmenorrhea.
B. In patients with slight pathologic changes in the pelvis.
   1. Persistent pelvic pain following previous operation.
   2. Sclerocystic degeneration of the ovaries.
C. In patients with advanced pathologic changes in the pelvis.
   1. Inoperable carcinoma of pelvic organs.
D. Disorders of the lower genital tract.
   1. Pruritis vulvae.

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2. Vaginism.
3. Dyspareunia.

E. Various disorders of the urinary bladder.
1. Cord bladder.
2. Spasm of bladder neck.
3. Intractable cystalgia.

F. In patients with disorders of function of lower bowel.
1. Hirschsprung's disease.
2. Obstipation of rectal origin.

The increasing adoption of the procedure of superior hypogastric sympathectomy as indicated by the numerous reports in recent literature created the need for, and gave a marked stimulus to, a study of the available literature on the detailed anatomy, and surgical anatomy of the plexus. The literature was found to contain many conflicting reports, including frequent repetitions of inaccuracies found in older reports, and one is inclined to agree with Robinson's[7] statement: "It would astonish any student to know how little has been published in regard to the nervous system of the female genitals that is of an original character."

The superior hypogastric plexus was probably first described by von Haller[24] and has subsequently been studied by numerous anatomists and surgeons who have given it various names and descriptions. This plexus is rarely a single nerve and always prelumbar, and yet it is commonly and erroneously referred to by the misleading term, "the pre-sacral nerve," (Latarjet and Bonnet.[8]) Recently Davis,[9,11] Labate[12] and others have stressed the inaccuracy of the term presacral and have come to popularize the more acceptable term of Sappey[13] "superior hypogastric plexus."

The existence, in the literature, of this wide variety of descriptions of the plexus led to a series of careful studies by a number of recent investigators, but as Davis has so well stated, "Painstaking and exhaustive though this work has been, and possibly because of these factors the variations in the findings of different writers on the morphology of the plexus are even wider than those exhibited by the older authors."

While all types of plexus patterns have been reported, the main conflict lies between those who have reported the predominance or sole existence of "presacral nerves" and those who have substantiated the finding of a predominance of "superior hypogastric plexuses." An understanding of the development of these differences can be derived from an appreciation of the fact that single nerves, bilateral cords, and a multiple variety of plexus formations occur, and when an investigator has had occasion to report a short series of dissections in which a single type predominates there is apt to be an emphasis on that type, whereas the result of a larger series would at once demonstrate that all varieties reported may occur, and that the plexus patterns predominate. It is also true that superficial and inadequate dissection will frequently reveal a single nerve or bilateral cord, whereas further careful dissection of the same subject will reveal many intercommunicating twigs and may uncover a typical plexus arrangement. In previous communications a detailed description of the connections of the superior hypogastric plexus (fig. 1) and of the morphology of

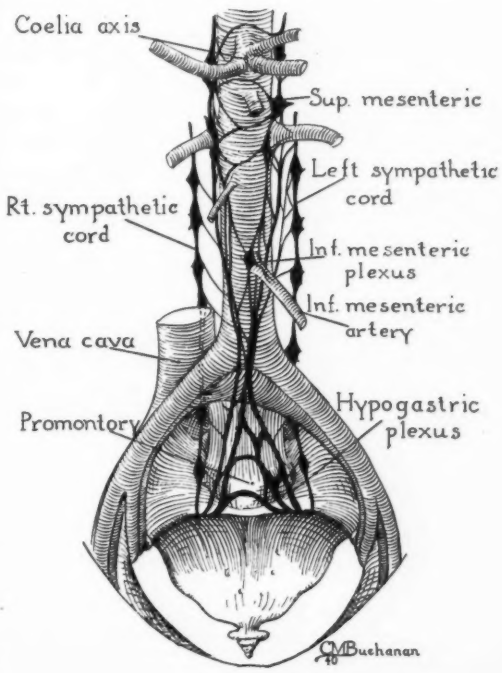

Fig. 1

the plexus has been considered.[14,15] The variation in the morphology can be appreciated by merely glancing at the illustrations of the plexus contained herein (figs. 2-11) and by considering the percentages

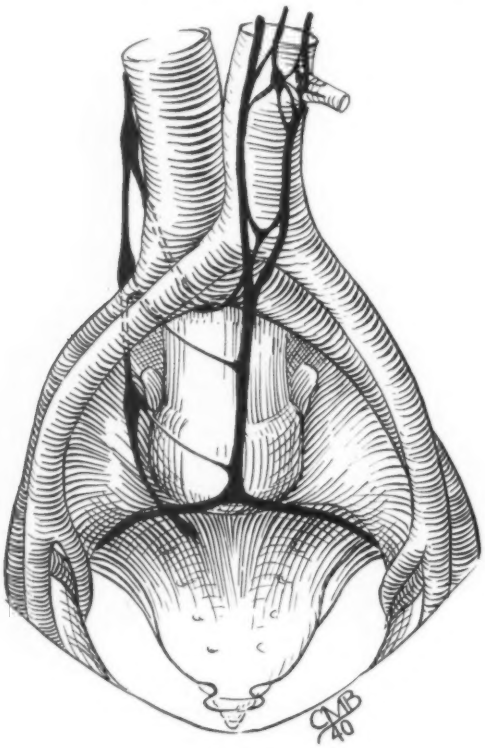

Fig. 2

of each of these types found in 150 dissections of the plexus as summarized in tables 2 and 3.

TABLE II

Morphology of the superior hypogastric plexus
(300 dissections)

	Number	Percentage*
Single nerve	11	4
Bilateral cords	22	7
Plexus types	267	89
	300	100

*Nearest whole number.

TABLE III

Variations in plexus patterns
(150 *dissections*)

	Number	Percentage*
Flat nerve cord (narrow parallel plexuses)	6	5
Multiple parallel cords	12	9
Narrow triangular plexus	44	33
Wide triangular plexus	52	39
Spider-web patterns	3	2
Arch-shaped plexuses	2	2
Plexuses deviated to the left	13	10
	132	100

*Nearest whole number.

There is one point, however, that I would like to stress; namely, the sensory, or afferent, fibers course in a manner which probably is similar to that of the motor, or efferents, except that they go via the posterior root ganglia. The afferent fibers of all the pelvic viscera transverse the superior hypogastric plexus with the exception of the ovarian and possibly some of the fibers of the fallopian tube which according to the physiologic and anatomic researches of Labate and Reynolds[31] "have no connection by way of the superior hypogastric plexus, nor do they traverse the inferior mesenteric ganglia or the lower aortic plexus." This observation is of considerable clinical importance, and is borne out by the results of sympathetic nerve block.

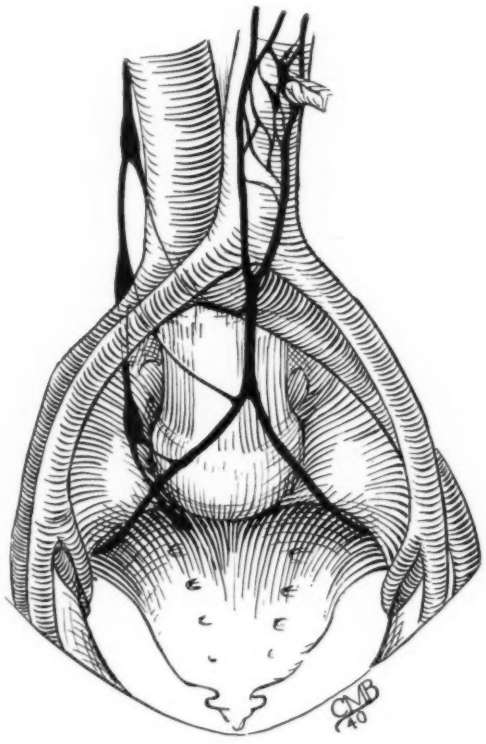

Fig. 3

The wider recognition of this contribution will call a halt to the needless (and of course unsuccessful) attempts to relieve pain of ovarian origin by superior hypogastric sympathectomy. The afferent nerves from

the ovary are contained in the periarterial ovarian plexus and reach the tenth thoracic level of the spinal cord (Kuntz[32]). The ovarian plexus is found in the suspensory

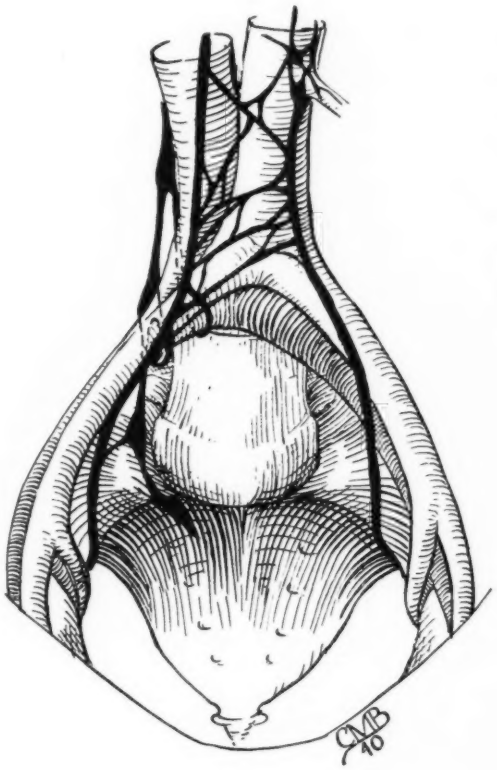

Fig. 4

ligament of the ovary and is joined by an external tubular branch from the fallopian tube. Five or six efferents of the tubular branch course through the broad ligament and reach the lateral aspect of the periarterial uterine plexus.

SURGICAL ANATOMY

A consideration of the surgical anatomy of the superior hypogastric plexus necessitates an appreciation of: (1) the interiliac trigone, in which the fibers of the plexus are always found; (2) the normal contents of the trigone; (2) "abnormal" contents of the trigone; and finally (4) the variations in the pelvic mesocolon.

The interiliac trigone has for its apex the bifurcation of the abdominal aorta, its lateral boundaries the common iliac arteries, and its base corresponds to a line joining the two common iliac arteries at the level of the promontory of the sacrum. The trigone, therefore, embraces an area comprising the lower half or third of the fourth lumbar vertebra, the intervening intervertebral cartilaginous disc and the fifth lumbar vertebra. Its length varies with the level of bifurcation of the abdominal aorta and tends to be slightly more elongated in

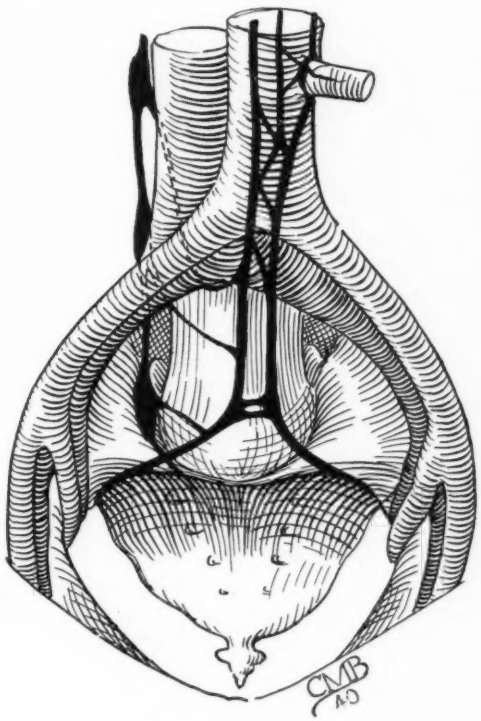

Fig. 5

the male. The width of the base of the trigone averages approximately 7 cm. and tends to be wider in the female. This is in keeping with the normal divergence of the

common iliac arteries from the bifurcation of the abdominal aorta, which occurs at an angle of 60 degrees in the male and 68 degrees in the female. It is of interest to note that the dimensions of the trigone were exactly similar in the negro and white female; however, in males the trigone tends to be narrower and longer in the negro than in the white.

CONTENTS OF THE INTERILIAC TRIGONE

The trigone normally contains the left common iliac vein, the middle sacral artery and veins, and the right ureter. On the left border of the trigone the inferior mesenteric artery and its sigmoid branch enter the root of the pelvic mesocolon. Finally a fairly tough retroperitoneal connective tissue layer, into which the fibers of the superior hypogastric plexus are incorporated, lies within this area.

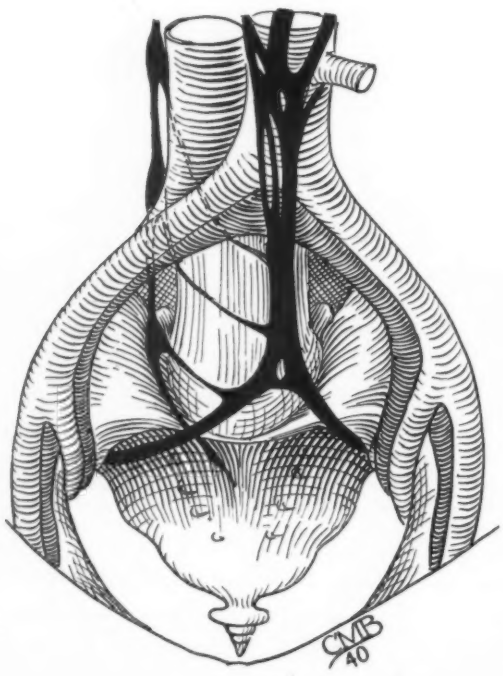

Fig. 6

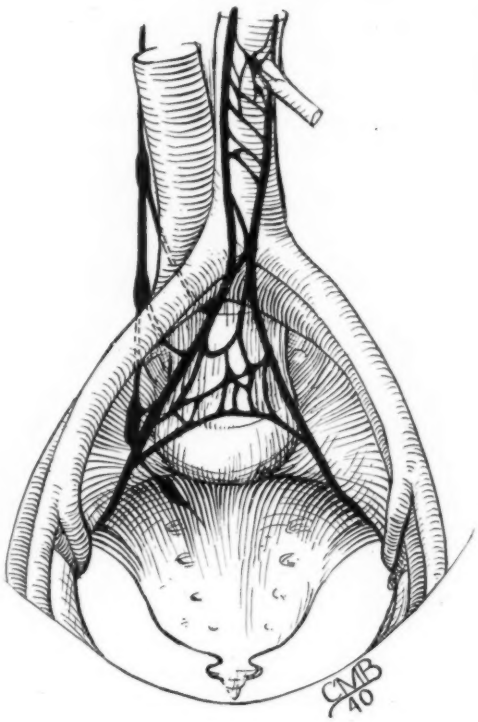

Fig. 7

THE LEFT COMMON ILIAC VEIN

The left common iliac vein runs parallel to the inferior (medial) margin of the left common iliac artery and courses upward and to the right, ascending posterior to the right common iliac artery to join the right common iliac vein in the formation of the vena cava. The left common iliac vein thus occupies a considerable portion of the upper and left aspect of the trigone. The vein is immediately subjacent to the overlying (anterior) layer of fibrous and fatty tissue in which the fibers of the superior hypogastric plexus are found and thus constitutes a surgical hazard of marked importance, especially when it is remembered that the wall of the vein is extremely thin. Fortunately, the fibrocellular layer which is firmly adherent in the remainder of the trigone is very loosely adherent to the vein and may

be easily separated from it. An appreciation of the surgical importance of this fact is heightened when it is recalled that in 9 per cent of this series the entire superior hypogastric plexus is shifted to the left and occupies an area solely in the left half of the trigone being markedly condensed anterior to the left common iliac vein. In performing a superior hypogastric sympathectomy the surgeon working "over" (i. e., anterior to) the vein takes advantage of this loose connection of the nerves to the vein, in an effort to avoid injury to the vessel. Injury to the vein has been reported.[16]

THE MIDDLE SACRAL ARTERY

The middle sacral artery and its accompanying veins descend from the bifurcation of the aorta to the tip of the coccyx. The artery passes downward in the interiliac trigone which it tends to bisect, though occasionally it occupies a position slightly in the left half of the trigone. Within the trigone it lies successively upon the intervertebral disc between the fourth and fifth

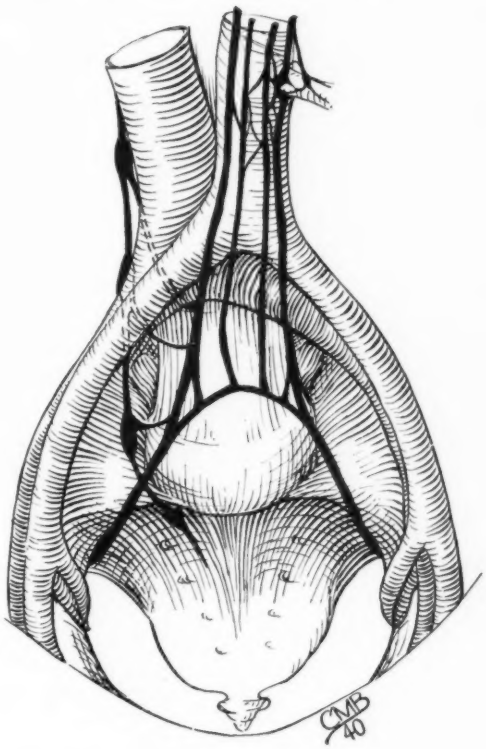

Fig. 9

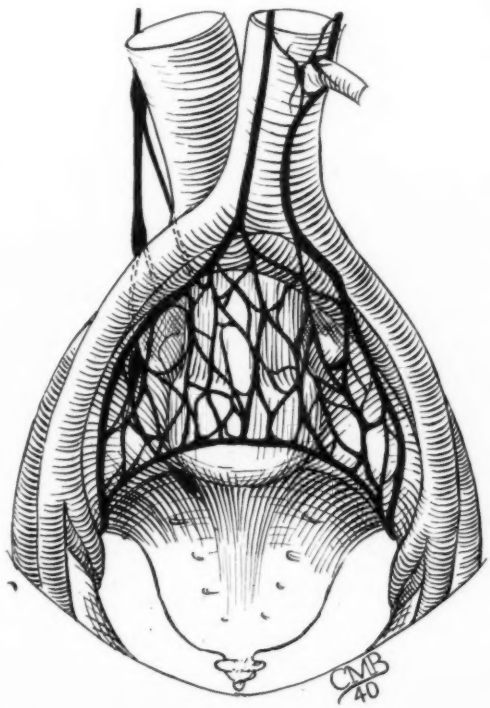

Fig. 8

lumbar vertebrae, and the interior aspect of the body of the fifth lumbar vertebra. It is posterior to the connective tissue layer which contains the nerve fibers, and may be palpated through this layer. The artery is not infrequently confused with a "single presacral nerve" type of superior hypogastric plexus and occasionally has been extirpated for the plexus. It is interesting to note that the artery which is not frequently visually obvious can almost invariably be palpated, while the nerve fibers of the superior hypogastric plexus which are frequently visually obvious through a transparent peritoneum can not be identified by

the palpating finger. When this point is appreciated more fully, the incidence of extirpation of the middle sacral artery for the "presacral nerve" will markedly decrease. An appreciation of the fact that the existence of a "presacral nerve" is in itself a rarity will also cause a cessation of the extirpation of a single cord area, and lead to the universal adoption of the policy of extirpating the entire interiliac fibrocellular tissue for removal of the superior hypogastric sympathetic plexus.

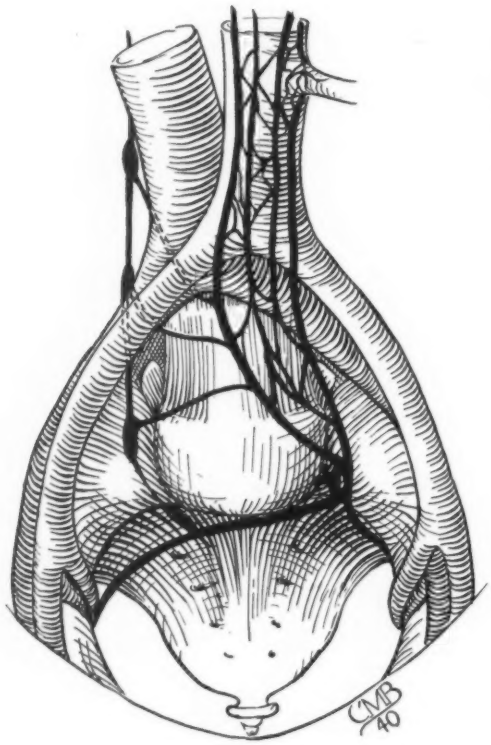

Fig. 10

THE RIGHT URETER

The right ureter is exposed in the interiliac trigone, where it crosses the right common iliac artery just superior to its bifurcation into the external iliac and hypogastric arteries (fig. 12). Fortunately, the right ureter is firmly adherent to the posterior

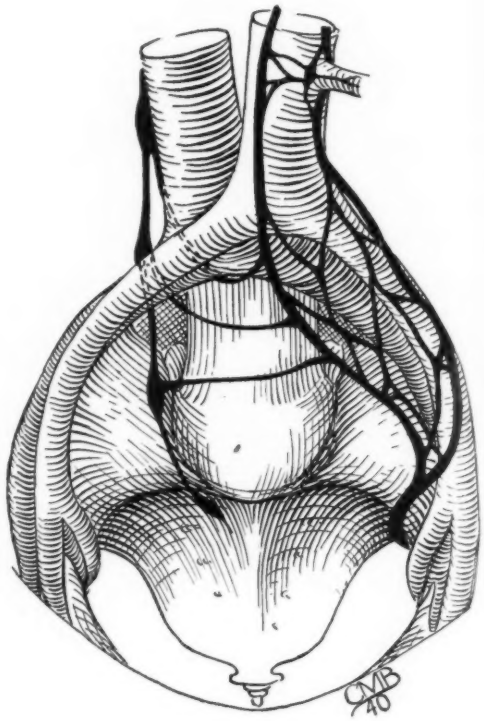

Fig. 11

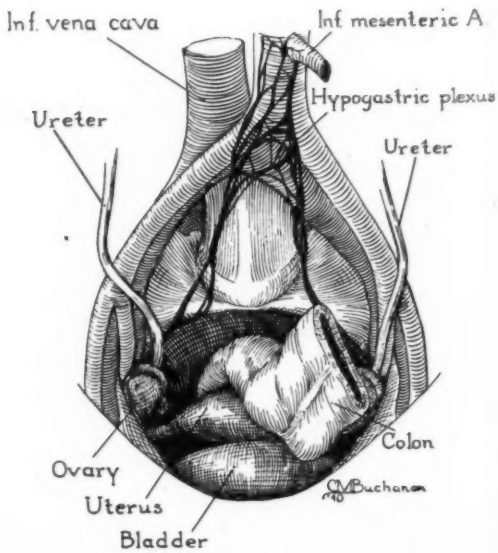

Fig. 12

surface of the peritoneum and is usually retracted with the peritoneum when it is reflected laterally, whereas the nerve fibers are incorporated into and firmly adherent to the subjacent fibrocellular layer of retroperitoneal connective tissue. Thus the ureter can be identified and injury to it avoided. In certain instances in which a type III mesocolon exists (vide infra) and it is necessary to retract the mesocolon sharply to the left, or when a type II pelvic mesocolon exists which must be retracted far to the left in order to remove it from the operative field, the ureter may be displaced mesially and be more liable to injury. The left ureter is normally found entirely outside of the interiliac trigone and is rarely subject to injury in superior hypogastric sympathectomy.

THE INFERIOR MESENTERIC ARTERY

The inferior mesenteric artery runs downward from its origin about 3.5 cm. superior to the bifurcation of the aorta, running obliquely and to the left, anterior to the lower portion of the abdominal aorta, and to the left common iliac artery. It descends into the pelvis between the layers of the sigmoid mesocolon to terminate in the rectum as the superior hemorrhoidal artery. Its sigmoid branches run downward, and to the left, to enter the sigmoid mesocolon, and are distributed to the sigmoid. As they enter the root of the pelvic mesocolon, they lie on the left border of the interiliac trigone, and in instances in which a type III mesocolon exists, they assume importance in superior hypogastric sympathectomy since it is necessary to dissect between the layers of the mesocolon to expose the interiliac trigone, and in such a dissection these vessels may be injured.

The interiliac trigone is entirely retroperitoneal. Its peritoneal covering on the right is reflected to the lateral walls of the pelvis and spreads downward to the anterior surface of the sacrum. On the left the peritoneum descends from the abdomen to the rim of the pelvis where it is reflected over the sigmoid colon and the upper portion of the rectum whence it is again reflected to the abdominal wall. The peritoneal layers which have thus ensheathed the pelvic colon approach each other superomedially and fuse to form a true mesentery, the pelvic mesocolon. Between the two layers of the pelvic mesocolon run the vascular and nervous supply of that section of the bowel.

SIGMOID MESOCOLON

There is considerable variation in the length and the position of the line of attachment of the pelvic mesocolon. In general three main types may be described (table 4):

TABLE IV

Variations of the pelvic mesocolon
(150 *dissections*)

			Type I		Type II		Type III	
Race	Sex		No.	%	No.	%	No.	%
W	M	.....	27	82	5	14	2	5
C	M	.....	67	70	15	16	14	14
W	F	.....	4	67	2	33	0	0
C	F	.....	11	79	3	21	0	0

Type 1. A short mesocolon easily retracted to the left and allowing adequate exposure of the interiliac trigone (fig. 13).

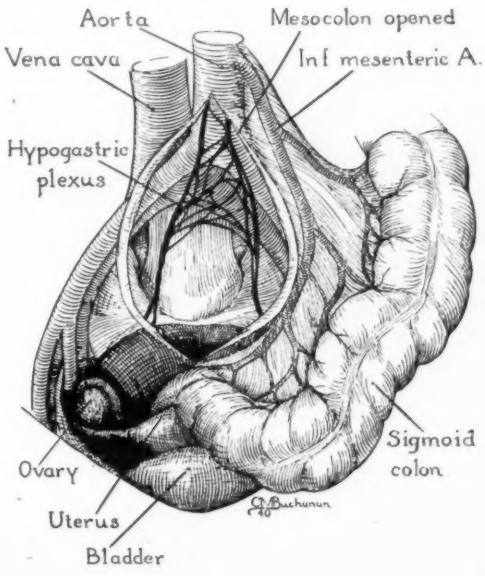

Fig. 13

Type II. A long mesocolon which may readily be shifted or retracted to expose the interiliac trigone (fig. 14).

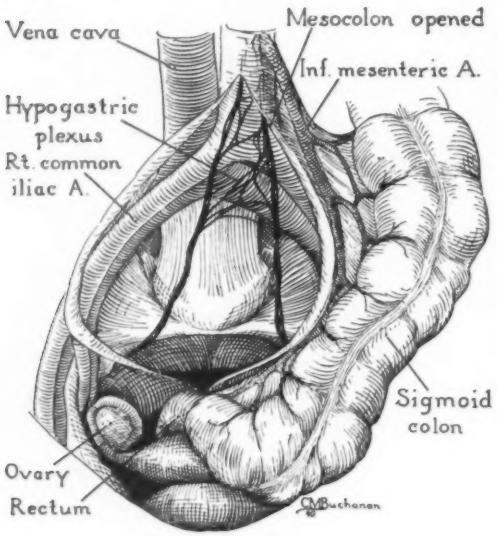

Fig. 14

Type III. A long mesocolon, the leaves of which embrace the interiliac trigone; its attachment being along the midline (fig. 15). This type of mesocolon makes difficult the exposure of the interiliac trigone, particularly when dissection between the leaves of the mesocolon is resorted to in order to expose the superior hypogastric plexus. This type of dissection endangers the vascular and nervous supply which is transmitted through the mesocolon to the bowel it ensheaths. Dissection between the layers of the mesocolon should be avoided and the superior hypogastric plexus exposed by incision parallel to the root of the mesocolon and through both of its layers (Elaut[17]).

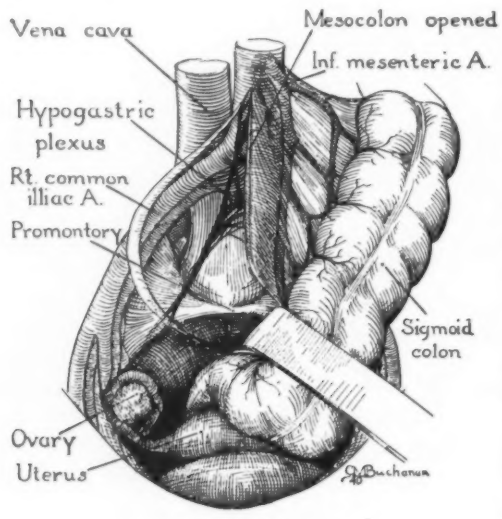

Fig. 15

ABNORMAL RELATIONS OF THE INTERILIAC TRIGONE

In addition to these normal relations of the interiliac trigone, various anomalies have been encountered. In four dissections accessory ureters were found which traversed the trigone. Davis similarly reported occurrences of accessory ureters in three of the 12 operative cases he studied. In several of our dissections in the infant, the right ureter bent rather sharply toward the midline and so was included in the trigone and subject to injury. This finding is confirmed by Labate, who included 52 infants in his report of 75 dissections.

In three of our dissections the transverse duodenum was found anterior to the interiliac trigone. In one of these cases the other abdominal viscera were also ptosed. In the two others the abdominal viscera were normally located with the exception of the duodenum. The left common iliac vein in 14 per cent of our dissections had sharp S-like deviations toward the midline, and projected into the interiliac trigone to well beyond the midline occupying the entire upper and left half of the trigone. In 2 per cent of this series the left common iliac artery had a similar deviation, and occupied a position which would normally be well within the interiliac area. In these two instances the artery was partially covered anteriorly with the hypogastric plexus which in each of these instances was of the spider-web pattern, and occupied an area comparable to the normal trigonal area. In one subject the right and left common iliac veins joined to form the inferior vena cava anterior to the bifurcation of the abdominal aorta. The interiliac trigone in this instance was bounded by the vena cava

superiorly and the common iliac veins laterally, the aorta and common iliac arteries being posterior to these structures. The superior hypogastric plexus in this instance was of the multiple cord pattern and within the venous triangle.

VENOUS ANOMALY IN THE INTERILIAC TRIGONE

The discussion of a very important vascular anomaly which occurs with surprising frequency and which has gained little attention in the literature has been left for last. The majority of investigators are silent on the subject. Elaut states "One must bear in mind a certain anomaly of the blood vessels occurring not infrequently within the interiliac trigone. In our rather small series of cases we met this condition twice, namely: a large, pencil-sized vein arose from the left common iliac vein, proceeded directly across the trigone and joined the opposite wall of the pelvis at a spot close to the bifurcation of the common artery. The veins lay on the periosteum, the nerves cross it obliquely, being adherent in a few places."[17] In the series of dissections herein reported anomalous veins of this type were found 26 times! Seventeen occurred in the male, and 9 in the female, with the distribution even between the negro and white. In several instances the vein was half as large as the common iliac vein (fig. 17) while in the greater number of cases the vein was of much smaller size (fig. 16). In three instances these large veins arose within the substance of the psoas muscle on the opposite side of the pelvis and crossed the interiliac trigone to empty into the left common iliac vein. Many of the smaller veins could be traced directly from the periosteum traversing the interiliac trigone and emptying into the common iliac vein. Several of the veins were in the nature of accessory hemorrhoidal veins which ran retroperitoneally to the left of the midline in the interiliac trigone to empty into the left common iliac vein. These veins are a distinct surgical hazard, and should be given much greater emphasis. Further investigations of their exact origins are in progress.

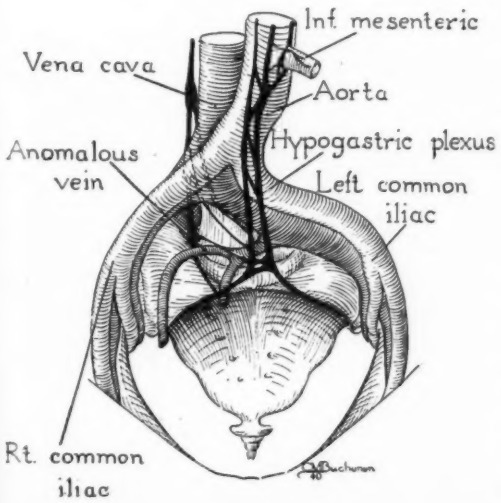

Fig. 16

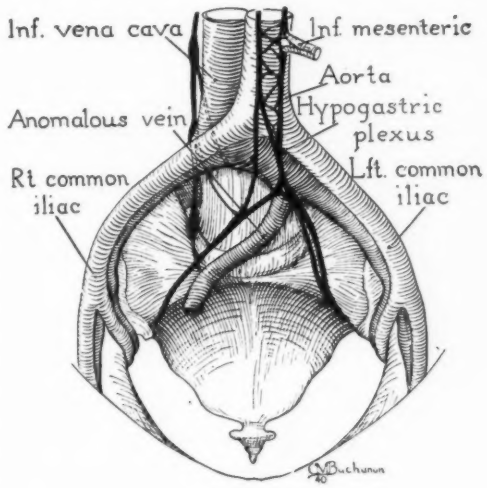

Fig. 17

PHYSIOLOGY OF THE SUPERIOR HYPOGASTRIC PLEXUS

A detailed review of the physiology of the pelvic sympathetic and parasypmathetic nerves does not come within the scope of this paper. However, despite a diversity of opinions among investigators, one might reach the general conclusions that sympathetic fibers are vasoconstrictors of the blood vessels of the pelvic viscera and the parasympathetics act in an antagonistic manner. The sympathetics seem to affect the contractibility of the cervix the while

inhibiting the uterine musculature, and parasympathetics causing an emptying or detrursor action on the uterine musculature and relaxes the sphincter like action of the cervix. The action of the sympathetics and parasympathetics on the bladder musculature is comparable.

It is interesting to consider in passing the effect of extirpation of superior hypogastric plexus on menstruation and parturition. Pearce[18] has recently stressed the lack of harm of this procedure in reference to childbirth and concludes that it "has no influence on any part of the progress of pregnancy, in some patients probably only a small proportion the first stage of labor is both painless and rapid or else unobserved." These conclusions are substantiated by the observations of many others (Collins[16], Cotte, Davis, Donaldson,[19] Keene,[20] Learmonth,[21] Fontaine and Herrmann,[22] and Wetherell[23]).

The menstrual cycle is unaffected by superior hypogastric plexus sympathectomy, though the period immediately following the operation may be prolonged (Fontaine and Herrmann).

The physiology of the superior hypogastric plexus in relation to the urinary system has been adequately stressed by McLellan[29] and Learmonth[21].

OPERATIVE TECHNIC

The technic of hypogastric sympathectomy is relatively simple. The patient is placed in steep Trendelenburg position, a subumbilical midline incision is made, the peritoneum opened, and after a self retaining retractor is placed the intestine is packed back with a laparotomy roll.

The interiliac trigone is exposed. The peritoneum over this area is opened and retracted laterally, the right ureter being retracted with the right flap.

The entire fibrocellular layer of tissue contained in the trigonal area is then isolated on aneurysm needles and excised down to the periosteum, care being exercised to avoid injury to the middle sacral artery and left common iliac vein (see discussion on surgical anatomy). The isolation and removal of this layer of tissue is aided by careful blunt dissection with Bittneur dissectors.

After the fibro-cellular lamina has been excised the area is inspected for bleeding and the peritoneal flaps closed with a continuous suture of plain 00 catgut. The intestine is allowed to fall back in place and the abdominal wall closed in layers.

In severe primary dysmenorrhea cases the ovaries are always inspected for prolapse and suspended if necessary.

COMMENTS ON THE USE OF HYPOGASTRIC SYMPATHECTOMY

The indications for hypogastric sympathectomy have previously been stated and may easily be reviewed in table I. My own experience with the procedure is limited to its use in severe primary dysmenorrhea and for the relief of pain due to pelvic malignancy.

In primary dysmenorrhea, superior hypogastric sympathectomy should be reserved as our last resort and should not be utilized until we have exhausted other forms of treatment, including particularly the more recent contributions in the field of endocrinology and the simpler surgical procedure of D & C and stem pessary.

If utilized with the utmost selectivity, and adequately done, there is no question but that the procedure is beneficial. In pelvic malignancy the procedure may be used with good results providing the metastasis has not become too widespread and has not involved osseous structures. While it will relieve pain, it has been the observation of C. J. Miller, Collins and others that pain will recur after a period of months when the metastases have become more pronounced. It is probable that newer procedures for the surgical relief of pain[30] are far more adequate, and deserve wider adoption than superior hypogastric sympathectomy in the relief of the pain of malignancy. However, there are occasions when one performs a laparotomy for the purpose of pan-hysterectomy for carcinoma of the fundus of uterus, and the case is found to be inoperable. In such cases a superior hypo-

gastric sympathectomy should be performed, the patient's condition permitting, rather than a simple closure of the abdomen, since in these cases the extirpation of the plexus will act as a prophylaxis against the occurrence of pain for a considerable period.

SUMMARY

The indications for hypogastric sympathectomy are discussed, together with a brief account of the physiology of the superior hypogastric plexus and results of its extirpation. The technic of hypogastric sympathectomy is briefly described and a report is given of 150 personal dissections of the superior hypogastric plexus: 20 females, 14 negro and six white; and 130 males, 96 negro and 34 white. The surgical anatomy of the interiliac trigone, an area bounded by the bifurcation of the abdominal aorta, the common iliac arteries, and the promontory of the sacrum, which contains the superior hypogastric plexus, is described. Stress is laid upon:

1. The wide variation in the configuration of the superior hypogastric plexus and the predominance of plexus patterns, 88 per cent; the uncommon finding of bilateral nerve cords, 8 per cent; and the relative rarity of the single "presacral nerve," 4 per cent.

2. The disposition of the normal contents of the interiliac trigone; (a) the left common iliac vein; (b) the middle sacral vessels; (c) the right ureter; and (d) the fibrocellular connective tissue lamina which contains the superior hypogastric plexus (fig. 12).

3. The anomalies of the interiliac region: (a) accessory ureters; (b) low lying transverse duodenum covering the anterior surface of the trigone; and (c) the anomalous vein which occurred in 26 dissections to which special emphasis is given (figs. 16 and 17).

4. The variations in length and implantation of the sigmoid mesocolon with a description of the three types encountered (figs. 13, 14 and 15).

REFERENCES

1. Cotte, G.: Sur le traitement des dysmenorrhees rebelles par la sympathectomie peri-arterielle ou la section du nerf presacre, Lyon med., 56:153, 1925.

2. Idem.: La sympathectomie hypogastrique a-t-elle sa place dans la therapeutique gynecologique, Presse med., 33:98, 1925.

3. Cotte, G.: Paris med., 54:583, 1927; Idem., Lyon chir., 24:103, 1927; Ibid., 24:741, 1927; Ibid., 24:403, 1927; Idem., J. med. franc., 17:395, 1928; Idem., Troubles fonctionnels de l'appareil genital de la femme. Paris: Masson et Cie, 1928; Idem., Rev. franc. de gynec., et d'obst., 23:475, 1928; Idem., Lyon chir., 25:717, 1928; Idem., Lyon med., 144:653, 1929; Ibid., 144:549, 1929; Idem., Chirurgie du sympathique pelvien en gynecologie. Paris: Masson et Cie, 1932; Idem., Lyon chir., 31:56, 1934; Idem., J. internat de chir., 1:169, 1936; Idem., Gaz. med. de Par., 44:325, 1937; Idem., Am. J. Obstet. & Gynec., 33:1034, 1937; Cotte, G., and M. Dechaume, J. de chir., 25:653, 1925; Idem., Presse med., 38:1687, 1930; Cotte, G., and R. Noel, Lyon chir., 24:404, 1927; Idem., Compt. Rend. Soc. de biol., 116:542, 1927.

4. Leriche, R.: De la part de la chirurgie du sympathique en gynecologie, Ann. med. et chir., 1:14, 1927.

5. Idem.: La chirurgie de la douleur, Presse med., 35:496, 1927.

6. Leriche, R., and Stricker, P.: Recherches experimentales sue le nerf presacre, Bull. et mem. Soc. nat. de chir., 53:819, 1927.

7. Robinson, B.: The cervical ganglion of the uterus, Med. Record, 46:403, 1894.

8. Latarjet, A., and Bonnet, P.: Le plexus hypogastrique chez l'homme, Lyon chir., 9:619, 1913.

9. Davis, A. A.: The technique of resection of the presacral nerve (Cotte's operation), Brit. J. Surg., 20:516, 1932.

10. Idem.: The innervation of the uterus, J. Obstet. & Gynec. Brit. Emp., 40:481, 1933.

11. Ibid.: The presacral nerve, Brit. M. J., 2:1, 1934.

12. Labate, J. S.: The surgical anatomy of the superior hypogastric plexus, "pre-sacral nerve", Surg., Gynec. & Obstet., 67:199, 1938.

13. Sappey, P. C.: Traite d'anatomie descriptive, p. 159, 1870.

14. Weinstein, B. B.: Surgical anatomy of the superior hypogastric plexus: report on 150 personal dissections, Surg., Gynec. & Obstet., 245:55, 1942.

15. Weinstein, B. B.: Surgical anatomy of the superior hypogastric plexus, Graduate thesis, Tulane University of Louisiana, 1940.

16. Collins, C. G.: Pelvic sympathectomy, New Orleans M. & S. J., 91:75, 1939.

17. Elaut, L.: The surgical anatomy of the so-called presacral nerve, Surg., Gynec. and Obstet., 55:581, 1932.

18. Pearce, T. V.: Childbirth after presacral neurectomy, Brit. M. J., 1:87, 1940.

19. Donaldson, M.: Discussion on sympathectomy for dysmenorrhea, Proc. Royal Soc. Med., 27:263, 1933.

20. Keene, F. E.: The treatment of dysmenorrhea by presacral sympathectomy, Am. J. Obstet. & Gynec., 30:534, 1933.

21. Learmonth, J. R.: Neurosurgery in diseases of the urinary bladder, Am. J. Surg., 20:27, 1933.

22. Fontaine, R., and Herrmann, L. G.: Clinical and experimental basis for surgery of the pelvic sympathetic nerves in gynecology, Surg., Gynec. & Obstet., 54:133, 1932.

23. Wetherell, F. S.: Pain in pelvis; relief by sympathetic neurectomy; cases in which the superior hypogastric plexus (presacral nerve) was resected, J. A. M. A., 101:1295, 1933.

24. Haller, A. V.: Lausane, 1778. J. H. Pott et Soc. Vol. 7:135. Quoted by Davis.

25. Miller, C. J.: Quoted by Collins (16).

26. Frankenhauser, F.: Ein Beitrage zur Anatomie und Gynaekologie, Jena: Fr. Manke, 1867.

27. Petit-Dutaillis, P., and Flandrin: Anatomie chirurgicale des nerfs du rein, Bull. et mem. Soc. anat. de Par., 93:635, 1923.
28. Reynolds, S. R. M.: Physiology of the Uterus, New York: Paul B. Hoeber, 1937.
29. McLellan, F. C.: The Neurogenic Bladder, Baltimore: Charles C. Thomas, 1939.
30. Peyton, W. T.: Surgical relief of pain, Surg., Gynec. & Obstet., 75:522, 1942.
31. Labate, J. S., and Reynolds, S. M. R.: Sensory pathways of the ovarian plexus, Am. J. Obstet. & Gynec., 34:1, 1937.
32. Kuntz, A.: The Autonomic Nervous System, Philadelphia: Lea & Febiger, 1934.

DISCUSSION

Dr. Wilbur C. Smith (New Orleans): I should like to congratulate Dr. Weinstein on this paper. I think he deserves tremendous credit for it. He devoted three and a half years to dissection of the plexus, and knows the gross anatomy of it and can readily demonstrate it. He deserves a great deal of credit. Personally, I think his paper on the superior hypogastric plexus is the best one that has been published in gross anatomy since the appearance more than three years ago of the paper by Dr. E. Zollicoffer Browne on the anomalies of the hepatic and cystic arteries. I am not particularly interested in whether there are 781 particles of fuzz on the left hind leg of a beetle or 782, but I am particularly interested in papers on gross anatomy that are in any way an aid to surgery. I again want to congratulate Dr. Weinstein on his paper.

Dr. Hilliard E. Miller (New Orleans): I did not rise to discuss the problem of dysmenorrhea from an anatomic standpoint. Dr. Weinstein's studies on that subject are, I believe, the most extensive in the literature, and I am glad that, with Dr. Wilbur Smith, I have been able to offer some encouragement in his work.

I particularly want to discuss the problem of dysmenorrhea from the clinical standpoint. The patients who suffer from painful menstruation fall into two distinct classes. One class consists of patients with demonstrable pelvic lesions, such as fibroids, cysts, diseased adnexa and polyps. Their trouble is of extrinsic origin and relief is easily obtained; one merely corrects the cause. The patients in the second class, in which we are most interested, suffer from primary or intrinsic dysmenorrhea and no one, so far as I know, has ever satisfactorily explained why they have pain. In a large percentage of cases the pelvic findings are perfectly normal. The uterus is normal, the cervix is normal, the vagina is normal, the adnexa are normal—and yet the patients are incapacitated every month.

Maldevelopment of the genital tract is not a universal explanation. More than half of the patients in this group, although their periods may be irregular or scanty, do not suffer at all. The remainder, however, do suffer, their ordeal varying from mere acute discomfort to pain so intractable that something obviously must be done about it. This is the group in which presacral sympathectomy has its widest field. I am in complete accord with Dr. Weinstein that it should be a last resort, but I also believe that there is a small number of patients in whom it is definitely indicated. I have personally done the operation on nine women, who have been followed for periods varying from one to six years, and in all of whom every other possible form of therapy had been tried without results. Seven of these young women are entirely well. They do not know, so far as pain is concerned, when their periods begin or when they end, and they follow a routine of life that formerly was impossible for them.

The eighth patient has had about 40 per cent relief, and the ninth patient has had no relief at all. In the latter instance I am inclined to think that I missed some of the fibers in the presacral plexus. Since Dr. Weinstein's report on the variations in the presacral plexus of nerves, I have been careful in such operations to go completely out to the ureters into the interiliac space when I am making the exposure, and I am also careful to dissect out all the fat within this space.

If maldevelopment of the genital tract is the cause of dysmenorrhea, it is reasonable to assume that an endocrine factor is also an underlying cause. Yet I do not know of any man who has shown that he can consistently relieve these women by any of the presently available hormones. Some have surmised that dysmenorrhea is caused by an imbalance of the estrogenic-progestin function of the ovaries, but the use of these hormones has not produced constant or even significant results. The estrogenic factor is supposed to initiate uterine contractions and the rationale of progestin therapy is to counterbalance it. The rationale may be correct, but the therapy is usually ineffective, and the same reasoning, in reverse, holds for the progestin factor.

On the other hand, I am personally convinced that there is some endocrine imbalance underlying dysmenorrhea, and I make the statement for this reason: The agent which has proved most effective in my own experience is plain thyroid extract. Why it is effective in dysmenorrhea I do not know, and nobody else, so far as I know, has explained it, or explained why it is also effective in the relief of menorrhagia, metrorrhagia and oligomenorrhea.

Whether the effect is primarily on the ovary, or whether thyroid extract acts primarily on the pituitary gland and secondarily on the ovary is not clear. When the estrogen-progestin balance is normal, the timing of menstruation, so to speak, is as perfect as the action and interaction of the cylinders under an automobile hood. The woman knows when she will menstruate, how long she will menstruate, and how many pads she will use. Thyroid extract often produces almost as absolute clocking, and my own experience is that it is the best regulator now available for the correction of all the anomalies and abnormalities connected with

the menstrual act. I seem to be making extravagant claims for a single agent, but most practicing gynecologists will support what I have said.

I want to emphasize another point, that surgery and endocrine therapy should not be employed until similar measures have been given a trial. Studies carried out in many private schools, in mass groups, support that stand. With their routine of living regulated by the ordinary rules of hygiene concerning food, clothing, exercise and rest, a surprisingly large number of girls who enter the school with dysmenorrhea find themselves completely relieved within a few months or a year merely by the observance of these simple rules.

Whatever may be the cause of dysmenorrhea, probably 75 per cent of all women suffer from it in some degree, and to the gynecologist it is an ever-present problem. Studies such as those reported will aid materially in its solution.

Dr. W. H. Byrne (New Orleans): Dr. Weinstein brought out the fact that there is a relatively high incidence of anomalous veins in the interiliac trigone and in so far as previous discussions of the anatomy of the plexus is concerned this point has not been mentioned with any degree of frequency. Yet in the past three years, two gynecologists, one of this city, Dr. Conrad G. Collins, and Dr. Albert M. Volmer of San Francisco, have reported their experience with such vessels, encountered in the process of resecting this plexus. Veins in this area may be torn or cut during the dissection or attempted ligation resulting in considerable blood loss and trauma to the common iliac vessels of the vena cava. That is the principal source of danger in an operation of this type and if one is familiar with the fact that these anomalous veins do occur he should be on the alert and try to avoid or minimize such trouble.

Another fact to be considered is that this plexus does not serve as part of the innervation of the tubes and ovaries. A method of differentiating between the origin of pain, whether uterine or tubal and ovarian, was explained in 1936 by Dr. P. G. Flothow of Seattle. He described a technic of blocking the superior hypogastic plexus, which is a modification of the Lebat type of block. Furthermore, he found that when success was obtained by this method there were sufficient clinical manifestations noted by the patient, principally in the form of increased heat in both lower extremities, which could be used as criteria for a satisfactory block. Relief of pain in this manner will also prove whether or not it was due to uterine or adnexal pathology. In those cases where Dr. Flothow failed to produce the sensation of increased heat in both lower extremities he also failed to get satisfactory results with the block.

I believe that before resorting to this type of operation for the relief of pelvic pain it will be of considerable value to attempt such a block and determine first if the pain is definitely of uterine origin, then when proceeding with operation be careful and avoid undue difficulty with these anomalous veins if they are present in the interiliac trigone.

Dr. Weinstein (In closing): I greatly appreciate the many comments of the discussors. I agree with Dr. Miller that hypogastric sympathectomy has a definite though limited place in the therapy of primary dysmenorrhea. It should be reserved as a treatment of last resort for those cases which have failed to improve when we have exhausted simpler procedures, such as routine hygienic care, diet, exercise, endocrine therapy, D&C and stem pessary. In the use of endocrine therapy I should like to emphasize the importance and value of thyroid, and in a limited number of cases, of progesterone. I agree fully with Novak when he states that hypogastric sympathectomy in dysmenorrhea is an admission of failure, and a gynecologist who can report a large series of personal cases probably has not given his patients the benefit of full trial of other therapies.

I am glad Dr. Byrne mentioned the differentiation of ovarian and uterine pain. I think that the failure to exercise careful selection of cases accounts for some of the reported failures with hypogastric sympathectomies. The ovarian innervation which is confined to the periovarian arterial plexus is quite independent of the superior hypogastric plexus and patients with pain of ovarian origin will not be relieved by hypogastric sympathectomy. In addition to the block of Flothow mentioned by Dr. Byrne, Davis in England has suggested the novocaine or alcohol block of the Frankenhauser ganglia being not only diagnostic, but curative in some cases.

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HUMAN SERUM AND PLASMA IN DISEASES OF CHILDREN*

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Human serum and plasma have found an especially secure place as therapeutic agents in diseases of children. The relative lability of the infant's fluid matrix, his lack of immune response to many infections, and the nature of disturbances peculiar to his age, combine to pose a threat which can often be countered most effectively by physiologic constituents of blood.

Transfusions of citrated fresh whole blood were formerly employed for all these

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conditions, and, of course, they are still used effectively in instances where oxygen carrying capacity of red blood cells is needed. While stored blood has been tried as a substitute for fresh blood, it has been shown to be relatively unstable. There is a gradual drop in erythrocytes, leukocytes, prothrombin, complement, and in antibacterial properties.[1, 2, 3, 4, 5] Diffusion of potassium from the red cells makes its use especially undesirable if renal or hepatic insufficiency is present.[6]

Serum and plasma are indicated and superior to blood in acute and chronic infections, in states of hypoproteinemia, in severe disturbances of fluid equilibrium, and in conditions due to increased capillary permeability caused by burns, trauma, and hemorrhage.[7]

Interest in physiologic protein substitutes has been especially stimulated by the more recent investigations on the physiology of fluid equilibrium and shock.[8, 9, 10, 11, 12, 13]

Plasma, the fluid portion of non-coagulated blood after removal of blood cells, is made up of albumin, globulin, fibrinogen, water, electrolytes, antibodies, and other organic constituents of blood. Although plasma is more popular as a blood substitute in this country, serum, which is almost identical, save for the removal of fibrinogen by clotting, is easier to prepare and has been the agent of choice for convalescent antibody transfer in children. Convalescent serum or a hyperimmune modification of this has been employed in many acute infections but it has been found especially effective in the prophylaxis and treatment of scarlet fever, measles, pertussis, and epidemic parotitis.

It is probable that a pool made up of specific sera collected from scarlet fever patients in a given epidemic will contain many specific antibodies against the type of hemolytic streptococci most commonly encountered in that epidemic. For this reason it is important that convalescent sera be collected early in an epidemic, pooled, and used for therapeutic purposes while the organisms against which the antibodies have been elaborated are still predominant. Type specific antibody, whether produced by, or transmitted to a patient, is an important part of the recovery mechanism from streptococcal disease. When conferred intravenously to the sick child, who may be incapable of efficient antibody production himself, it quickly combats toxemia and inhibits bacterial invasion.[14]

Reports on the use of convalescent measles serum have contributed to a vast medical literature. However, it was not until effort was made to collect, pool, and preserve a large supply of serum that reports of controlled experiments began to appear, and its value became generally acknowledged. It is now recognized as the most effective agent available against a disease which has appeared as a real menace during time of war.

Success with convalescent serum in measles led to attempts toward modification of whooping cough. Bradford[15] contributed much fundamental research to this problem. He showed that intratracheal inoculation of *H. pertussis* into a mouse would produce consistently uniform findings in the lungs. He made use of investigations of humoral immunity in pertussis chiefly directed toward studies relating to specific agglutinins and complement fixing antibodies.

Because of the increase in the opsonocytophagic reaction in the blood of individuals who have a history of pertussis and were subsequently hyperimmunized, this procedure has been recommended to make available a group of donors for hyperimmune convalescent serum. This hyperimmune serum protected young mice against death from experimentally induced infection with *H. pertussis* when the serum was injected at the same time that the organisms were administered.[16] Thirty-two from a group of 40 treated mice survived, while only four survived from a group of 40 controls. The degree of lung involvement in the treated group was definitely less than in the controls. The difference between

the groups in the number of mice showing negative lung cultures at autopsy was also statistically significant.

Bradford tested the effect of hyperimmune human serum upon the humoral antibody titre in human pertussis. A group of 19 infants and three children in the early stage of pertussis were treated by the intramuscular injection of from 10 to 40 c. c. of hyperimmune human serum. In 19 of the group the opsonocytophagic reaction and agglutinin titres of the blood were determined immediately before and after serum injections.[17] The humoral antibodies as measured by these methods were increased to levels comparable to those characteristic of convalescence. A definite decrease in the absolute number of lymphocytes of the blood was noted in 15 of the 22 cases, and there was marked improvement in the clinical course of the disease in 18 of the 22 cases treated with the serum. Although evaluation of serum in whooping cough is most difficult from a statistical standpoint, results with the use of hyperimmune serum among exposed or afflicted infants have been dramatic in our experience. It is prepared in our laboratory from the blood of medical students who give a history of pertussis and who have been inoculated at frequent intervals with Sauer's vaccine during a period of one year.

Mumps convalescent and pooled normal adult serum have been used by McGuiness, Stokes, and Mudd.[18] Results in comparative studies with controls strongly suggest that it has prophylactic merit when used promptly after exposure.

A favorite form of treatment used by many physicians in cases of bacteriemia is the administration of transfused blood. The transfusion is generally given not because the patient needs blood cells but because he needs the immune substances contained in the transfused blood. It has been observed many times that patients with bacteriemia show a slight increase in the complement titre of their blood at the onset of the illness. The amount of complement decreases as the infection progresses and with recovery gradually returns to normal. In severe cases, the complement continues to decrease, and many severely ill patients show a complete absence of complement. Most of the patients dying of bacteriemia show a great decrease or a total absence of complement in their blood. It would therefore seem that complement constitutes a very important immunologic factor in combatting infection.

It has been shown by Cadham[19] and others that patients transfused with large or moderate amounts of whole blood suffer a loss of complement. When serum alone is administered, on the other hand, complement actually increases. From this it may be assumed that decrease in complement following whole blood transfusion is due in some way to the cellular portion of the blood. Moreover, it seems that transfused serum actually stimulates the production of the recipient's complement. Complement titres taken following transfusions with serum become higher than can be accounted for by the complement contained in the transfused serum alone. It is suggested therefore, that additional complement is produced by the patient himself, due to the stimulating action of the transfused serum.

PROTEIN DEPLETION OF THE BODY STORES

It is well known that chronic infections often cause a depletion of protein in the body. As in acute infections, where protein levels may have a bearing on survival,[20] the influence of chronic infection is similar even though the results are less dramatic. Moreover, a cycle is often initiated during chronic infections in which diminished protein intake, excessive loss of protein, hypoaminoacidemia, and negative nitrogen balance may result. Plasma or serum can materially help to combat chronic infection in two ways in children: (1) by its non-specific effects on metabolism and (2) by conferring antibodies contained in adult plasma pools. Infections in the very young are often accompanied or overshadowed by the effects of hypoproteinemic states.

Disturbances of fluid equilibrium, especially dehydration, in the sick child are frequently of greater importance than the un-

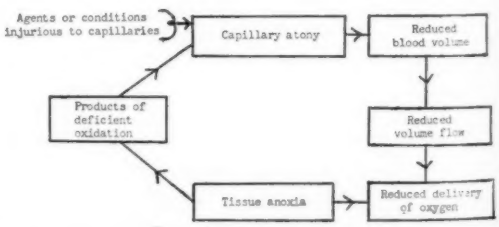
derlying disease itself. This is true because of the relatively greater susceptibility of children to the effects of changes in volume and character of body water.

The small child has a greater percentage of water in his body than the adult and a greater partition of this is extra-cellular where it serves to maintain plasma volume. He may, therefore, lose a proportionately greater amount of fluid during dehydration. If, following vomiting, diarrhea, or the pronounced febrile response so common to the child, he loses water and salt to the point where replacement of these does not bring about maintenance of his fluid stability, it is because adequate quantities of these are not retained in the blood stream. There then begins a cycle of diminished blood volume, hemoconcentration, impaired renal function, and loss of electrolyte balance. If protracted vomiting has been the prominent symptom and alkalosis is indicated by the occurrence of shallow respiration, hypertonicity, and lack of chloride excretion, the therapeutic need is saline solution, calcium gluconate or chloride, and plasma intravenously. If, on the other hand, diarrhea, with loss of basic intestinal secretions has occurred, reduction in plasma bicarbonate may have reached an extreme. Hemoconcentration and stagnation then cause impaired renal function. Exhaustion of carbohydrate reserve and anoxemia permit intermediate products of fat metabolism and acids to accumulate in the blood. The resulting acidosis may then be attended by an increase in capillary permeability and manifested by stupor, hyperpnea and symptoms of shock. Such a seriously altered physiologic state can best be corrected by the intravenous administration of glucose and buffered sodium lactate or bicarbonate, followed by a protein colloid such as plasma. Restitution of plasma volume will tend to increase renal function. Fluids containing buffer substances may then be held in the blood stream so that a sustained trend toward proper water and electrolyte balance can be achieved.

Nutritional deficiencies are intimately concerned with a lack of protein. Studies reveal clearly that reduced plasma protein is directly responsible for nutritional edema in children whether the primary cause of the hypoproteinemia is prematurity, inadequate feeding, coeliac disease, or any process which interferes with normal fabrication of protein.[21] When plasma protein and volume are restored, edema promptly disappears. The relative frequency of this condition and its association with malnutrition has been especially emphasized by Dodd.[22] There is no doubt that nutritional hypoproteinemia at or slightly above the "edema level" is very common in delicate babies and children with deficiency diseases, and that a prompt restoration of normal levels may alter an apparently refractory clinical course.

From a relatively simple beginning these altered physiologic conditions, accelerated by infection or other factors, often rapidly approach a critical state. Much of the mechanism of secondary shock then develops.

More dramatic and urgent than secondary or medical shock is the rapidly progressive primary shock precipitated especially by trauma, hemorrhage, and burns. Moon[7] and others have shown that plasma escapes through the capillary walls into the tissues in all types of shock and that diminution of blood volume results. While the intimate nature of shock is not yet entirely clear, and some disagreement still prevails concerning the neurogenic, vasogenic, and hematogenic roles involved, the following schematic presentation by Moon serves to present many of the stages in its pathogenesis.



Increased permeability of the capillaries and plasma loss are attended by reduced blood volume, capillary dilatation, hemocy-

toconcentration, lowered venous pressure, reduced cardiac output and volume flow, anoxemia, and tissue anoxia. If these changes continue and are not recognized by the finding of a high hemoglobin, red blood cell count, hematocrit, and specific gravity of the blood, a resulting fall of arterial pressure and an irreversible state develop rapidly. Plasma can interrupt this process by increasing the circulating blood volume and improving vascular tone.[23] Fluid is thus drawn back from the tissues due to increased osmotic pressure, and the improved blood volume helps to reverse the cycle. Some observers prefer concentrated plasma for this purpose.[24]

Restoration of serum protein values for elevation of osmotic pressure of blood to reduce localized or generalized collections of intracellular fluid has been attempted in nephrosis.[25] Patients with a favorable response lose weight in a manner similar to that in which weight is lost in spontaneous renal crisis, which may mean that a similar process is initiated by this type of treatment. Cases with a nephritic component do not show such a response.

Hughes, Mudd, and Strecher[26] have reported a series of cases in which concentrated serum was used for the reduction of increased intracranial pressure. They point out that concentrated blood serum approximates the theoretically ideal hypertonic solution for reducing intracranial pressure. It is essentially a solution which has a high osmotic pressure and contains solutes which will remain in the blood vessels to exert a continued osmotic effect.

Experiments on dogs were conducted by Wright and Bond[27] in which cisternal puncture was done to obtain continuous readings of intracranial pressure. Their results indicate that a single administration of concentrated serum may produce lowering of increased intracranial pressure for as long as twenty hours.

Investigators[28] of the causes of disruption of abdominal wounds have pointed out that experimentally and clinically a state of hypoproteinemia may be one of the factors which retards normal healing. Dogs in which a state of protein deficiency was induced were subjected to abdominal laparotomy. In most of these, disruptions of the wound or failure of the incision to heal was observed. Subsequent experiments demonstrated that normal healing of the wound occurred when the hypoproteinemia was controlled by intravenous infusion of plasma. Concentrated plasma is thought to have two advantages; it rapidly corrects the deficiency of blood proteins, and, being a hypertonic solution, increases the osomotic pressure of the blood and tends to overcome any tissue edema which may be present.

Rapid extensive hemorrhage causes dilution of blood, loss of extra-vascular fluid, dehydration, and distorted fluid equilibrium. Since immediate need in severe hemorrhage is restoration of blood volume and pressure and because typing and cross-matching are unnecessary[29] when pooled plasma is employed, it would seem more expedient and safer to use plasma for the hemorrhagic emergency and replace blood cells by transfusion subsequently, if the hemoglobin level is appreciably reduced.

Obviously, no comprehensive formulae can be evolved to determine the requirement of all factors in a mechanism so complex and precipitated by so many causes as the failing circulation of the sick child. Clinical judgment to determine the need for specific and group antibodies, for fluids, for electrolytes, and for protein sufficient to maintain an adequate circulating blood volume are all important. Determination of plasma protein, the number of red blood cells, the hemoglobin, hematocrit, and specific gravity of the blood are invaluable adjuncts. Katherine Dodd has stated the principle exceedingly well: "In a child taking inadequate food and not receiving transfusions, a gain in weight, accompanied by an increase in hemoglobin and a decrease in plasma protein, means that plasma fluid and protein are being lost from the blood stream."

The dosage of human plasma and serum must depend on the weight of the child and the seriousness of the condition for which it is to be employed. For the transfer of

specific antibodies in prophylaxis and treatment of disease, doses of 10 c. c. to 100 c. c. are usually given. In chronic infections any hypoproteinemic states, doses should be gauged to accomplish physiologic levels of plasma proteins. For the sake of illustration, a computation of approximate protein need in a 10 kilogram baby whose plasma protein level is 5.3 grams per 100 c. c. of blood is appended.

Plasma protein (patient) = 5.3 gm./100 c. c. blood
Plasma protein (normal) = 6.7 gm./100 c. c. blood
deficit = 1.5 gm./100 c. c. blood
Weight of patient = 10 K
Blood volume (8%) = 800 c. c.
Deficit 8 X 1.5 = 12.0 gm.
12.0 gm. = 175 to 200 c. c. plasma (approx.)
(X Factor = Depleted reserve
Additional (
(X Factor = Maintenance

Plasma and serum are usually stored in the refrigerated, the frozen, and the desiccated states. Strumia and McGraw,[30] who have studied the advantages and disadvantages of each method of preservation, have summarized these as follows:

"1. Regardless of the means of preservation employed, plasma must be safe from the standpoint of (a) bacterial contamination, (b) presence of flocculent protein precipitates, and (c) unusually high isoagglutinin titre.

"2. The manner of preservation greatly influences the survival of various specific elements of plasma. To summarize: (a) Preservation of plasma in the liquid state at room temperature (approximately 25° C.) causes very little flocculation but rapid loss of prothrombin and complement. It should be filtered before use, and the danger of rapid growth of a chance contamination must also be kept in mind. The value of such material is limited almost entirely to the total protein content. (b) Preservation of plasma in the liquid form at 4° C. maintains a fair quantity of prothrombin and complement for a period of approximately fifty days, but causes maximal flocculation within a few hours. Filtration is essential and the danger of bacterial growth from a chance contamination is not eliminated. (c) Preservation of plasma in the dried state effectively prevents bacterial growth and flocculation, but the regenerated material has lost almost all the prothrombin and a portion of the complement when drying involves quantities of 250 and 300 c. c. It need not be filtered and permits concentration if desired, but it is of little value for hypoprothrombinemia. (d) Preservation in the frozen state prevents bacterial growth, and flocculation and at the same time insures almost complete preservation of all specific elements, including prothrombin and complement. After proper thawing it need not be filtered, and the therapeutic value is practically equal to that of freshly prepared plasma. Thawing must be rapid in the water bath at 37° C. and thereafter, until administered, the liquid plasma must be kept at room temperature.

"3. The loss of essential elements occurring with preservation of plasma in the liquid state or in the dried form obviously limits the therapeutic application of plasma thus preserved. Plasma maintained in the frozen state and properly thawed is almost identical to the original material."

REFERENCES

1. Bull, D. C., and Drew, C. R.: Symposium on fluid and electrolyte needs of surgical patient: preservation of blood, Ann. Surg., 112:498, 1940.
2. Kilduffe, R. A., and DeBakey, M. E.: Blood Bank and the Technique and Problems of Blood Transfusion, C. V. Mosby Co., St. Louis, 1942.
3. Quick, A. J.: Prothrombin in preserved blood, J. A. M. A., 114:1342, 1940.
4. Rhoads, J. E., and Panzer, L. M.: Prothrombin time of "bank blood," J. A. M. A., 112:309, 1939.
5. Rous, P., and Wilson, G. W.:—Reference to come.
6. Cantarow, A.: Changes in blood following repeated withdrawal of ascitic fluid in cirrhosis of liver, Am. J. Clin. Path., 8:142, 1938.
7. Moon, V. H.: Shock and Related Capillary Phenomena, Oxford University Press, New York, 1938.
8. Gamble, J. L.: Chemical Anatomy, Physiology and Pathology of Extra-cellular Fluid, A Lecture Syllabus, Harvard Medical School, 1939.
9. Darrow, D. C., and Yannet, H.: Changes in distribution of body water accompanying increase and decrease in extra cellular electrolytes, J. Clin. Invest., 14:266, 1935.
10. Butler, A. M.: Electrolyte and water balance, New England J. M., 220:827, 1939.
11. Scudder, J.: Symposium on fluid and electroylte needs of surgical patient: studies in blood preservation: stability of plasma proteins, Ann. Surg., 112:502, 1940.
12. Blalock, A.: Principles of Surgical Care, Shock and Other Problems, C. V. Mosby Co., St. Louis, 1940.
13. Levinson, S. O., and Cronheim, A.: Suppression of isoagglutinins and the significance of this phenomenon in serum transfusions, J.A.M.A., 114:2097, 1940.
14. Platou, E. S., Dwan, P., and Hoyt R.: Streptococcus convalescent serums (scarlatinal): potentialities of type-specific pools, J.A.M.A., 116:11, 1941.

15. Bradford, W. L.: Experimental infection in mouse produced by intratracheal inoculation with H. pertussis, Am. J. Path., 14:377, 1938.

16. Bradford, W. L., and Wold, M.: Personal communication.

17. Katsames, C., McGuiness, A. C., and Bradford, W. L.: Personal communication.

18. McGuiness, A. C., Stokes, J., and Mudd, S.: Clinical uses of human serums preserved by lyophile process, J. Clin. Invest., 16:185, 1937.

19. Cadham, F. T.: Some immunological problems in septicaemia, Brit. M. J., 2:460, 1930.

20. Sako, W.: Resistance to infection as affected by variations in proportion to proteins, fat and carbohydrate in diet, J. Pediat., 20:425, 1942.

21. McQuarrie, Irvine: Impaired ability to fabricate serum proteins, the chief cause of edema in chronic constrictive pericarditis, J.-Lancet, 5:199, 1942.

20. Dodd, Katherine: Edema in infancy and childhood as expression of chronic dietary insufficiency, J. Pediat., 8:442, 1936.

23. Hill, J. M., et al.: Use of desiccated plasma, with particular reference to shock, J.A.M.A., 116:395, 1941.

24. Muirhead, E. E., Hill, J. M., and Ashworth, C. T.: Use of human plasma protein solutions in surgery, Southern Surgeon, 11:414, 1942.

25. Aldrich, C. A., et al.: Concentrated human blood serum as diuretic in treatment of nephrosis, J.A.M.A., 111: 129, 1938.

26. Hughes, J., Mudd, S., and Strecher, E. A.: Reduction of increased intracranial pressure by concentrated solutions of human lyophile serum, Arch. Neurol. & Psychiat., 39:1277, 1938.

27. Bond, D. D., and Wright, D. G., Treatment of hemorrhage and traumatic shock by intravenous use of lyophile serum, Ann. Surg., 107:500, 1938.

28. Thompson, W. D., Ravdin, I. S., and Frank, L. L.: Effect of hypoproteinemia on wound disruption, Arch. Surg., 36:500, 1938.

29. Strumia, M. M., Wagner, J. A., and Monaghan, J. F.: Intravenous use of serum and plasma, fresh and preserved, Ann. Surg., 111:623, 1940.

30. Strumia, M. M., and McGraw, J. J.: Blood plasma: its place in practice of medicine, with special consideration to problems of preservation, J.A.M.A., 118:428, 1942.

DUODENAL DIVERTICULITIS, ACUTE AND CHRONIC*

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A complication to duodenal diverticulosis introduced the entity to the literature; Chomel in 1710 described a duodenal pouch containing calculi. Contended rare in early reviews, perfection of roentgenologic observation (Case, Cole and Roberts, Andrews, Spriggs and Marxer, Larimore and Graham, Wheeler, Edwards, and Weintraub and Tuggle) and careful necropsy demonstration (Baldwin, Nagel, Horton and Muella, and Grant) have proved diverticula of the duodenal segment relatively frequent. The revelation that they were more than anatomic curiosities awaited the description, by Bassett in 1907, of fatal complications. Nevertheless, in relation to their frequency, they are seldom associated with demonstrable pathology. The actual infrequency of complicating diverticulitis is emphasized by the dearth of surgically managed instances reported. A search of the literature revealed only thirteen case reports since Basch's surgical achievements of 1917.

Our experience with three instances of diverticulitis, two acute and the third chronic, therefore, seems unusual and justified our report of these instances with comparative statistics. We restricted our study to the past three years, for we wish better to evaluate our work as done under a single roentgenologist and further, it is only in recent years that radiographic diagnosis has been sufficiently accurate.

CHART 1

DUODENAL DIVERTICULA IN 2297 GASTROINTESTINAL PATIENTS WITH 789 G. I. SERIES

Number	Single	Multiple	Retention	Age			Duodenal Location		
				-40	40-50	50	1st	Vaterian	2nd	3rd
42 (5.3%)	40	2	12 (52%)	6	13	13	3	18	11	13

Although varying considerable in published reports the incidence of diverticulosis appears to be about 1.6 per cent. In our group the 5.3 per cent emphasizes the accuracy of our roentgen studies.

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Kellogg showed diverticula occurring singly in 80 per cent of cases; our groups show 40 of the 42 instances, or 95 per cent.

The statistics of Linsmayer show occurrence beyond the age of 50 in 36 of 41 cases, Kellogg's figures show 65 per cent above the half century mark. Our study also favors age as an etiologic factor with 55 per cent over 50 years of age.

Sex apparently is of little significance; male predominance, however, is more frequently reported (Kellogg). Our study adds nothing of value in this respect, showing 22 females and 20 males.

Fifty-six per cent of diverticula occur in the second portion of the duodenum according to Kellogg's statistical survey. Twenty-nine (69 per cent) of our cases occupied this segment and of these 18 occupied the site of the ampulla of Vater.

CHART 2

RELATION TO OTHER ROENTGENOGRAPHICALLY DEMONSTRABLE PATHOLOGY IN 789 G. I. SERIES

	No.	Per Cent		No.	Per Cent
Duodenal diverticula	42	5.3	Chr. ulcerative colitis	17	2.1
Esophageal diverticula	3	0.3	Hiatal hernia	17	2.1
Gastric carcinoma	4	0.5	Cardiospasm	23	2.9
Gastric diverticula	5	0.6	Cholelithiasis	39	4.9
Gastric ulcer	9	1.9	Duodenal ulcer	149	18.8

This illustrates the relative frequency of diverticulosis of the duodenum.

The supposed immunity to inflammatory change is considered due to two characteristics. (1) Comparative sterility and fluidity of their content; (2) wide mouthed ostia and inverted supported position (when on the concave side of the duodenum) rendering easy dependent drainage. This second and mort important consideration seemingly lacks substantiation when one appreciates the statistics of Weintraub and Tuggle that 52 of 310 cases showed a six hour retention; this stasis should favor bacterial growth and inflammatory involvement.

Kellogg, in variation from other contributors, states "chronic inflammation is frequent." However, he adheres to "acute inflammation, suppuration and gangrene are rarely described." Agreeing fully with his conclusions we must admit the infrequency of acute diverticulitis, but we would like to emphasize the frequency of chronic inflammatory changes and suggest that many a diverticulum is not as innocuous as its discoverer may conclude.

The manifestations of acute duodenal diverticulitis are those of an acute abdomen with nausea, emesis, pain and localized tenderness with associated muscular rigidity, fever and leukocytosis. These occurring in a patient with a roentgenologically demonstrable diverticulum suggest the diagnosis, but concomitant involvement of adjacent viscera may complicate the picture.

Chronic diverticulitis is considered characterized by intermittency and simulation to a duodenal ulcer syndrome. By associated pathology, ulceration, duodenitis, cholecystitis, obstruction of duodenum and common duct, and pancreatic involvement, they may display an involved syndrome. The manifestations may be as indefinite as the term "dyspepsia." We must admit the difficulty in relating symptomatology to existing pathology.

As to the diagnosis we cannot vary from Case's statement: "When a duodenal diverticulum is roentgenologically demonstrable, when retention of barium is marked, and when the pouch is tender to pressure, the diagnosis of duodenal diverticulitis is justified."

In our 42 cases, there were three instances in which diverticulitis was proved.

CASE No. 1

This patient was a 63 year old woman, six months' convalescent from cholecystectomy (acute cholecystitis with cholelithiasis) who for approximately three months had experienced intermittent epigastric pain with fever and leukocytosis. On one occasion, there was mild icterus and bile stained urine.

Examination revealed obesity, acute illness and exquisite epigastric tenderness with moderate muscular rigidity.

Roentgen study revealed: "arising from the descending duodenum in the region of the ampulla of Vater is a large diverticulum. Palpation directly over it elicits exquisite tenderness. At six hours—a large residuum outlines the diverticulum."

Fig. 1 (Case No. 1): Illustrating the single large diverticulum with long pedicle apparently angulated.

Common duct calculus was considered in the differential diagnosis.

Exploratory excluded common duct calculus. The diverticulum was found acutely inflamed with marked peridiverticulitis. An anterior gastroenterostomy with enteroenterostomy was performed. Convalescence was complicated by digestive manifestations explainable on a basis of her achlorhydria and accommodation to her gastroenterostomy. Subsequently she developed steatorrheal manifestations considered due to associated pancreatic involvement by the peridiverticulitis.

Four months postoperatively she was asymptomatic and has remained so.

CASE No. 2

This was a 63 year old woman with intermittent upper abdominal pain associated with chills, fever, nausea and emesis. Examination revealed an obese, acutely ill, febrile woman with acute upper abdominal manifestations.

Roentgen study revealed multiple duodenal diverticula. "The most proximal is at the junction of the second and third portions of the duodenum. Marked functional disturbances are seen in the duodenum. At six hours, there is barium in the traverse duodenum and two of the larger diverticula still are filled."

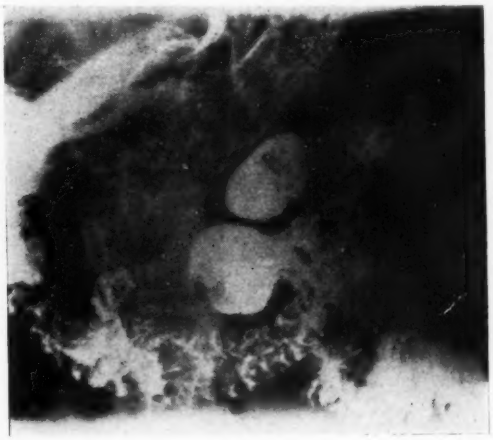

Fig. 2 (Case No. 2): Showing the large mouthed diverticula occupying the distal duodenum which should have drained readily but which did show 6 hour retention.

Under conservative measures, the acute manifestations subsided and the patient considered herself well, but a recurrence three months later indicated surgical intervention. Acute inflammatory changes were found. Because the diverticula were considered distal a duodenojejunostomy was performed. The patient did not improve; radiographically an undiscovered diverticula obstructed the anastomosis. Five months later, on reoperation, the pylorus was plicated and a gastroenterostomy was done. Autopsy revealed diverticulitis of the duodenum with acute peritonitis and also a Meckel's diverticulum and primary carcinoma of the pancreas.

CASE No. 3

A 40 year old woman complained of intermittent epigastric pain associated with nausea and hematemesis. She had been jaundiced with one seizure. Examination revealed obesity, acute epigastric tenderness and anemia.

Thorough diagnostic study revealed no abnormality other than a diverticulum in the descending

duodenum with six hour barium retention and acute localized tenderness.

Exploratory revealed no other pathology. There was considerable peridiverticulitis. The diverticula was dissected free, excised and the stump ligated, inverted and sutured.

This patient has been free of abdominal discomfort.

Fig. 3 (Case No. 3): Showing the diverticulum in the first portion of the duodenum.

Of the remaining 39 cases, demonstrable pathology other than the diverticula accounted for the symptoms of 13, leaving 26 patients with no diagnosis other than diverticulosis with possibly chronic diverticulitis. We have tabulated these manifestations for evaluation.

CHART 3

TWENTY-SIX CASES OF DIVERTICULA WITHOUT OTHER DISEASES

	No.	%
Epigastric pain	24	90
Duodenal ulcer syndrome	16	60
Nausea	19	70
Barium retention	12	46
Localized tenderness	15	53
Pancreatic or biliary dysfunction	21	80

Eight of these cases were so definitely instances of diverticulitis that operation was considered; in three because of electivity and their age it was considered inadvisable, three improved on an ulcer regimen and the remaining two (Vaterian type) subsequently underwent cholecystectomy for acute cholecystitis without cholelithiasis.

While it has been stated by roentgenologists Weintraub and Tuggle that it is "hazardous to assume a diverticulum is cause of abdominal symptoms" we must express ourselves as feeling otherwise. Even where it is apparent that there are no actual evidences of inflammation nor any threat by their position, we must consider Morton's suggestion "It is possible their presence may upset the smooth running of the gastrointestinal tract by disturbance in the nerve control." Certainly they are a departure from the normal and as such may account for any bizarre manifestation according to their location.

There are complications to this complication reported:

1. Perforation:—our tabulation shows seven reported instances. The clinical picture is that of an acute upper abdominal catastrophy.

2. Perdiverticulitis:—Case (1916), Maclean (1927), Lucinian (1930) and Nicholson (1935) have each given descriptive instances of upper abdominal symptoms related to duodenal diverticula adhered to adjacent tissues.

3. Duodenitis:—is recorded as a rare sequelae but should be, in our opinion, a likely accompaniment. The actual diagnostic proof is difficult clinically. Wilkie demonstrated the existence of such combined pathology.

4. Hemorrhage has been mentioned.

TREATMENT

Operation is, of course, the only corrective therapy. Asymptomatic diverticula are usually left alone, for every surgeon appreciates the possibility of fistula formation after opening the retroperitoneal duodenum. Their occurrence in a complaining patient, free of other demonstrable pathology who does not respond to medical manage-

ment similar to an ulcer regimen, are due exploration and operative management. Invagination and suture is permissible for small pouches; cyst formation and obstruction must be admitted as potential complication to such surgery. Large sacs deserve excision, careful inversion of the remnant and transverse suturing should the neck be wide. Maclean has offered transduodenal resection in ampullary instances to minimize the trauma to important structures. Rarely does the uncomplicated diverticulum indicate pylorectomy or pyloric occlusion and gastroenterostomy; however, multiplicity may indicate such or perhaps duodenojejunostomy should the diverticula occupy the distal duodenum and permit an anastomosis proximally.

CONCLUSIONS

1. The diagnosis of duodenal diverticulosis is more readily made by improved roentgen study and was found in 5.3 per cent of our cases.

2. Acute duodenal diverticulitis is rare, but possibly more frequent than supposed. Two instances in our study represents 4.7 per cent.

3. Chronic duodenal diverticulitis is a diagnosis that may be rightly made.

4. When sufficient manifestations are only explainable by a roentgenographically demonstrable diverticulum which is tender and retains barium, operative correction is certainly advisable.

5. We have not considered other serious complications to duodenal diverticula.

CHART 4

SURGICALLY MANAGED ACUTE DUODENAL DIVERTICULITIES

Case	Year	Author	Age	Sex	Site	Operation	Associated Pathology	Result
1	1917	Basch	36	F	II	Resection-gastro-enterostomy	Duodenal dilatation	Cured
2	1920	Moore	58	M	II	Resection-gastro-enterostomy	None	Cured
3	1923	Maclean	58	F	II	Resection-duodenotomy	Chr. pancreatitis	Cured
4	1923	Huddy	27	F	II	Resection-drainage	Perforation	Cured
5	1925	Butler & Ritvo	40	M	II	Inverted & sutured	Duodenal ulcer	Cured
6	1926	Bensaude & Vasselle	36	M	I	Gastroenterostomy	Duodenal ulcer	Cured
7	1927	Monsarrat	58	F	II	Resection-drainage	Perforation	Cured
8	1929	Erkes	53	F	I	Drainage	Perforation	Died
9	1929	McQuay	65	M	II	Gastroenterostomy	Cholelithiasis	Cured
10	1930	Lucinian	36	F	II	Resection	Perforation	Cured
11	1933	Costello	37	M	II	Inverted & sutured	Perforation	Cured
12	1938	Beaver	54	M	II	Drainage	Perforation	Died
13	1939	Boland	59	M	II	Cholecystectomy & appendectomy	Perforation	Died
		Surgeon				Our Cases		
1	1939	Ochsner & Maes	62	F	II-III	Duodenojejunostomy-gastroenterostomy	Perforation—duodenal obstruction—carcinoma pancreas	Died
2	1942	Maes	62	F	II	Anterior gastroentero-stomy-enteroenterostomy	Pancreatitis—jaundice	Cured

In acute inflammatory states, it seems best judgment to avoid the site of pathology and plan a side-tracking operation, preferably with pyloric occlusion or even gastric resection.

We wish to accredit the excellent radiographic studies in this report to Dr. M. Teitelbaum of Touro Infirmary.

BIBLIOGRAPHY

Andrews, E. W.: Duodenal diverticula, J. A. M. A., 77:1309, 1921.

Baldwin, W. M.: Duodenal diverticula in man, Anat. Record., 5:121, 1911.

Basch, S.: Diverticulum of duodenum, Am. J. M. Sci., 153:833, 1917.

Bassett, V. S.: Duodenal diverticula, Chicago Path. Soc., 7:83, 1907.

Beaver, J. L.: Acute perforation of a duodenal diverticulum, Ann. Surg., 108:153, 1938.

Boland, F. K.: Acute perforated duodenal diverticulum, Surgery, 6:65, 1939.

Butler, P. F., and Ritvo, M.: Diverticulum of the duodenum, Boston M. & S. J., 192:705, 1925.

Case, J. T.: Roentgen observations on the duodenum with special reference to lesions beyond the first portion, Am. J. Roentgenol., 3:314, 1916.

Chomel, J. B. L.: Diverses observations anatomiques, Hist. Acad. Roy., Paris, 3:48, 1710.

Cole, L. G., and Roberts, D.: Diverticula of the duodenum, Surg. Gynec. & Obstet., 31:376, 1920.

Costello, C. D.: Duodenal diverticula, Brit. J. Radiol., 6:577, 1933.

Cryderman, W. J.: Duodenal diverticula, Canadian M. A. J., 17:1455, 1927.

Edwards, H. C.: Diverticula and Diverticulitis of the Intestine, Bristol, John Wright & Sons, Ltd., 1939.

Erkes, F.: Quoted by Kellogg.

Grant, J. C. B.: On the frequency and age incidents of duodenal diverticula, Canadian M. A. J., 33:258, 1935.

Horton, B. T., and Mueller, S. C.: Duodenal diverticula, Proc. Staff. Meet. Mayo Clinic, 7:185, 1932.

Huddy, G. P. B.: Duodenal diverticula with report of a case of gangrenous diverticulitis, Lancet, 2:327, 1923.

Lahey, F.: Surgery of the duodenum, New England J. M., 222:444, 1940.

Larimore, J. W., and Graham, E. A.: Diverticula and duplicature of the duodenum, Surg. Gynec. & Obstet., 45:257, 1927.

Lucinian, J. H.: Diverticulum of the duodenum perforated into the pancreas, Am. J. Roentgenol., 24:684, 1930.

Maclean, N. J.: Duodenal diverticulitis, Ann. Surg., 85:72, 1927.

McQuay, R. W.: Duodenal diverticula and their surgical treatment, Ann. Surg., 89:36, 1929.

Monsarrat, K. W.: Acute perforation of a duodenal diverticulum, Brit. J. Surg., 14:179, 1926.

Morton, J. J.: The surgical treatment of primary duodenal diverticula, Surg., 8:265, 1940.

Nagel, G. W.: Unusual conditions in the duodenum and their significance, Arch. Surg., 11:529, 1925.

Nicholson, W. M.: Jaundice produced by a diverticulum of the duodenum, Bull. John Hopkins Hosp., 56:305, 1935.

Ogilvie, Robertson, F.: Duodenal diverticula and their complications with particular reference to acute pancreatic necrosis, British J. Surg., 28:362, 1941.

Ritchie, H. P., and McWhorter, G. L.: Duodenal diverticula with report of a case associated with duodenal ulcer, Surg. Gynec. & Obstet., 25:485, 1917.

Spriggs, E. I., and Marxer, O. A.: Intestinal diverticula, Brit. M. J., 1:130, 1926.

Weintraub, S., and Tuggle, A.: Duodenal diverticula, Radiology, 36:297, 1941.

Wheeler, Digby: Diverticulum of the duodenum, Canadian M. A. J., 39:214, 1938.

Wilkie, D. P. D.: Duodenal diverticula and duplicature of the duodenal wall, Edinburgh M. J., 11:219, 1913.

DISCUSSION

Dr. Alton Ochsner (New Orleans): I think it is indeed gratifying for an internist to suggest surgical therapy as much as Dr. Browne has in these cases. His statistics are to me interesting. It is interesting that 5 per cent of his patients who were examined roentgenologically had duodenal diverticula, a higher incidence than that of gastric carcinoma and ulcer.

It is interesting to note that only 13 instances of operation have been reported since 1917. While that is undoubtedly true it does not give a true picture of the condition. I personally, have had seven or eight; I never have thought it worthwhile to report. I am sure that is true of other surgeons. There are not many patients operated upon, it is true, but the fact that only 13 have been reported since 1917 astounds me.

Dr. Browne brought out that in duodenal diverticulosis the treatment is one of conservatism. Only after symptoms of obstruction or diverticulitis should the patient be operated upon. In my experience, retention usually occurs in the first and second portions.

In contrast to diverticula of the colon where infection is the rule, infection is the exception here. As Dr. Browne brought out, if the patient does have symptoms one should not delay too long surgical therapy.

Dr. McHardy (In closing): I wish to emphasize the fact that these 13 cases, surgically managed, reported in the literature, are instances of acute duodenal diverticulitis; we were not covering surgery of diverticula in general in this survey. Morton in his review and Kellogg in his thoroughness also reveal this rarety.

Further it seems apparent the surgeons disregard the entity for in the most recent report of an instance the operator on an acute abdomen did a cholecystectomy and appendectomy in an instance where autopsy revealed a perforated duodenal diverticulitis.

We are emphasizing the existence of an entity which is not as rare as supposed.

BAGASSE DISEASE OF THE LUNG

W. A. SODEMAN, M. D.†
and
ROSCOE L. PULLEN, M. D.†
NEW ORLEANS

The report of Jamison and Hopkins[1] in 1941, of pulmonary disease presumably resulting from inhalation of bagasse dust, has led recently[2, 3] to further recognition of the disease and the development of several theories of the cause. Jamison and Hopkins reported the isolation of a fungus from the sputum of their patient and suggested that this organism was the etiologic factor. Castleden and Hamilton-Paterson could not confirm the fungus theory but put forward

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evidence to support an allergic origin. The following case is reported because investigation resulted in the observation, for the first time as far as we can determine, of the pathologic picture in the pulmonary tissue.

CASE REPORT

R. A., a white male, aged 26, entered the Tulane Unit of Charity Hospital on February 23, 1943, complaining of shortness of breath and cough. He stated that he was well until a month previously when he noted marked dyspnea on exertion. Cough developed and produced a small amount of mucoid sputum. There was no hemoptysis. With the cough, night sweats appeared but the patient did not take his temperature. There was a weight loss of 17 pounds in the first three weeks. The patient had worked in bagasse dust for 20 weeks before the development of symptoms.

Past history revealed little of importance. The usual childhood diseases were recorded. There was no history of pulmonary tuberculosis or of the symptoms related to it, nor of typhoid or rheumatic fever. The patient had never been operated upon. The system history was not contributory, nor was the family history.

Physical examination disclosed a thin white male of 26, sitting in bed, with obvious dyspnea. The respiratory rate was 35 per minute, pulse rate 115 per minute, temperature 100°F. Blood pressure was 132/80. He coughed occasionally, raising small amounts of mucoid sputum. Oral hygiene was poor; there were many carious teeth. The only findings of importance were in the lungs. The chest was symmetrical and expansion equal. Impaired resonance and breath sounds were present in the right base except in one area at the posterior axillary line where minimal signs of consolidation were elicited. Fine rales were present in both bases posteriorly. The remainder of the examination was essentially negative.

Blood examination showed hemoglobin of 15.8 gm., erthyrocytes 4.9 million, leukocytes 13,500, with 60 per cent polymorphonuclear leukocytes, and no eosinophiles. The Wassermann and Kline reactions were negative. Blood urea was 15.4 mg. per hundred cubic centimeters. Five sputum examinations were negative for acid-fast bacilli. No fungi were found. Urine was negative. A Mantoux test (1:10,000 O. T.) was negative. Chest x-ray showed a miliary ground glass mottling throughout both lung fields, radiating from the hilar regions. The apices were clear (fig. 1). Lung biopsy was obtained with a 12-gauge needle in the sixth week of the disease. A reproduction of the section from the biopsy is show in figure 2. The section was reviewed by Dr. B. Pearson of the Tulane University Department of Pathology. Through his kindness we give the following report: "The biopsy, taken during the sixth week of the disease, reveals pulmonary tissue in which there are embedded several 'spicules' of an irregular foreign material. This is similar to bagasse material when placed under the microscope. Under the

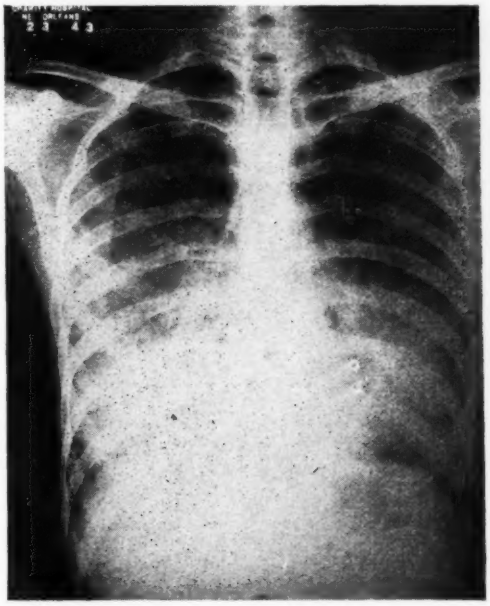

Fig. 1: Roentgenogram of chest taken on admission, showing the miliary ground glass mottling throughout both lungs, radiating from the hilar regions. Apices are clear.

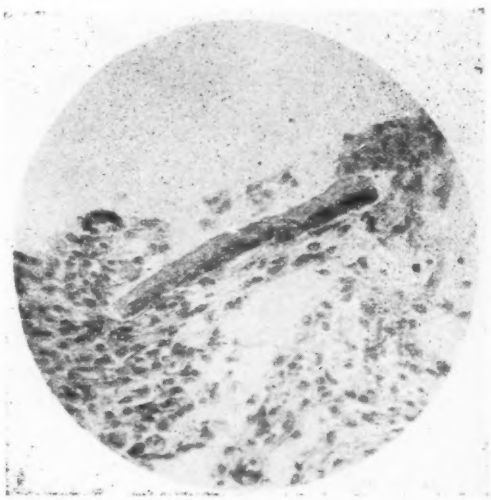

Fig. 2: Reproduction of a section of the lung obtained by needle biopsy, showing a large piece of foreign material having the characteristics of bagasse under the polarizing microscope. A number of small scattered spicules were also seen.

polarizing microscope these 'spicules' are seen to rotate polarized light. Many smaller scattered pieces, with an average size of 2 x 8 mu are also found. These latter structures are seen especially where there is a fibroblastic reaction of the interstitial tissue of the lung."

The patient's temperature varied from 100.4° to 98° F. An x-ray of the chest showed some clearing of the infiltration. The patient gradually improved and, on the twenty-third day, was discharged to the out-patient clinic for ambulatory care, a chest x-ray taken on March 5, 1943, showing considerable clearing of the process.

DISCUSSION

The clinical picture shown by this patient is similar to that found in Jamison and Hopkins' patient. We have collected our cases of bagasse disease and analyzed the clinical picture to establish its basic features. This report, which includes a discussion of the etiologic considerations, will appear elsewhere.[4] Our interest in the present case centers upon the demonstration, for the first time to our knowledge, of the pathologic changes in the lungs. Particles of bagasse are seen and were confirmed by the polarizing microscope. The progress of the reaction and the occurrence of a consistent picture is not yet demonstrated. Through the kindness of Dr. J. Schenken of the Department of Pathology of the Louisiana State University Medical School we are permitted to report the microscopic findings in the lung of an autopsied case of bagasse disease. The section is reproduced in figure 3. Dr. Pearson described the section as follows: "In a section of a lung obtained from a patient dying of bagasse disease, an increase in the fibroblast reaction of the interstitial tissue is shown. Small needle-like spicules can be seen occasionally in these areas when subjected to polarized light, but are not as numerous as in the biopsy. However, the alveolar cells are now very large and the cytoplasm is foamy. Aside from being larger, they are much more numerous than the previous section and in some areas fill the alveolar spaces." In this section the process appears to be more advanced than in the biopsy of our reported case. Bagasse dust is in less evidence in the lung tissue but is definitely shown by the polarizing microscope. However, fundamentally the same type of reaction is seen.

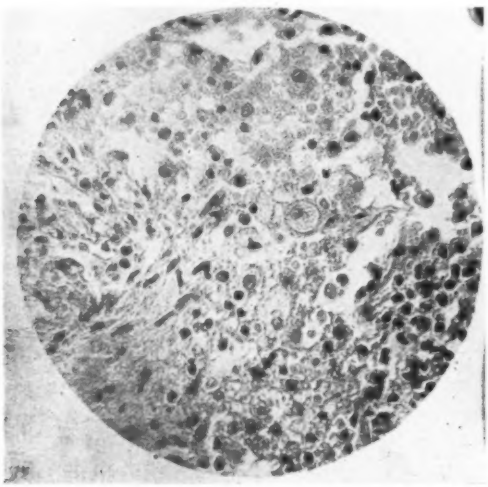

Fig. 3: Reproduction of a section of the lung obtained at autopsy from a patient who died from bagasse disease. The alveolar cells are very large and the cytoplasm has a foamy appearance. (See text.)

It is evident that particles of bagasse may enter the alveolar regions and produce the reaction described above. The picture appears, therefore, to be an organic pneumoconiosis, but the mechanism of the changes, and the nature of the stimulus set up by the bagasse dust to produce the cellular reaction, remain obscure.

SUMMARY

A case of bagasse disease of the lung is reported together with the findings at biopsy in an involved area of the lung. These findings are compared with those in the lungs of a fatal case. The picture appears to be that of an organic pneumoconiosis.

REFERENCES

1. Jamison, C., and Hopkins, J.: Bagassosis: A fungus disease of the lung, New Orleans M. & S. J., 93:580, 1941.

2. Castleden, L. I. M., and Hamilton-Paterson, J. L.: Bagassosis: An industrial lung disease, Brit. M. J., 2:478, 1942.

3. Gillison, J. A., and Taylor, F.: Four cases of bagassosis, Brit. M. J., 2:577, 1942.

4. Sodeman, W. A., and Pullen, R. L.: Bagasse disease of the lung. (To be published.)

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GET A MEMBER

This editorial is directed primarily to the members of the Louisiana State Medical Society directly; they realize and appreciate the value of organization; they know that the medical profession must stand together if it is to combat the drives that are made by certain individuals to bring about the introduction of state medicine. It is addressed to the members of the State Society indirectly in that it is through them that the doctors who do not belong to the State Society can be brought into the organization. The physicians of the State Society should see to it that every doctor in their neighborhood becomes a member of the State Society if he is not already a member of the organization. The medical men who do not belong to organized medicine at the present time are slackers, and it should be pointed out to them that it is unfair for a limited number of medical men to maintain and to be responsible for medical practice in this state and in this country. This is a selfish attitude, because they are depending on others to uphold and to sustain medical practice as it is now conducted.

If it might not be wise to tell the nonmembers of the organization that they are not doing their duty, it might be more tactful to point out to them why a man should be a member of the Louisiana State Medical Society. Some of these reasons are obvious. The annual meeting and the journal afford an opportunity of hearing and reading scientific and up-to-date medical papers. The annual meeting is conducted with friendship and good will on the part of everyone. It is good to get together with your medical confreres. The State Society is instrumental in keeping out practitioners of various cults and isms from the state. This is not only beneficial to the profession but also it is of decided advantage to the ignorant and to the unintelligent who might call upon these people were they practicing in the state, and to their sorrow.

Membership in the Society gives to the member protection from malpractice suits. To each member of the Society goes the official medical journal. The State Society is instrumental in obtaining a low rate premium for group indemnity and for group life insurance. If the doctor should become crippled or should he have misfortune in the later years of his life, an indigent fund is provided to help him out in his difficulties. Membership in this organization is a prerequisite to belonging to the American Medical Association and the Southern Medical Association. The Secretary-Treasurer of the State Society is at call of the mem-

bers of the organization, and through him they may be informed as to what is going on in the state, whether it be a question of locating a suitable place or whether it has to do with the motions that are introduced in the state legislature which have to do with medical practice and medical affairs.

Membership in the Society is of economic value to its members; it is of scientific value and it is of social value. No man who is practicing medicine in the State of Louisiana can afford to be a non-member of the organization. He is making others responsible for the advantages that he obtains as a member of the profession. You members of the State Medical Society tell these facts to the doctor who does not belong of the value of organized medicine. Get him to join up.

—o—

MEDICAL SERVICE PLANNING

One of the many problems which is causing fear and worry to the average physician is that one which has to do with the so-called socialized medicine. The medical man can not help but feel with the depression that is bound to occur after this war that there will be a sustained effort to regiment the medical profession under the guise of economic necessity. Medical men as a group talk much and write a little about the evils of governmental control of their profession, but on the whole they do not do a whole lot about it. It is obvious that we are living in a period of changing times, and that the best way to circumvent the social theorists is to have a definite plan and scheme for medical service which the doctors can introduce, control, and which will prove reasonably effective.

Already some 20 state medical societies have considered seriously medical service plans to introduce in one or another of their respective states. Some states have already developed, through their state medical societies, prepaid medical service plans which are reasonably satisfactory and which are indices of the trend towards accomplishing something which will be definitely concrete. In California they have the California Physicians Service; in New Jersey the Medical-Surgical Plan. In Michigan, Pennsylvania, Colorado, North Carolina, and Massachusetts, as well as a few other states, medical service plans have reached the stage of accomplishment. As these plans vary considerably they will afford an opportunity for future study to determine which is the best and which is the most satisfactory of them all.

Already much valuable information of the state medical society service plans has been obtained. There has been shown that it is extremely difficult to put on an actuarial basis the need for medical service. People are likely to take advantage of the prepayment for medical service opportunities and demand more of the doctor than he should be required to give. There has not been any great enthusiasm on the part of the public as a whole to enter in the service schemes. Many doctors feel that unnecessary surgical procedures may be carried out under duress and the pleading of patients, as they can obtain surgical relief without cost to themselves and they believe that surgical intervention should be tried, although the doctor may not be thoroughly convinced in his own mind that an operation will cure the underlying condition. One of the difficulties in selling any such scheme is to place an income level above which it is inadvisable to offer to the well to do patients medical insurance. It is quite generally held that plans should be provided only for those in the lower income group, and the consensus is that it should not be placed higher than an income of from $2,000 to $3,000 for a family.

The House of Delegates to the American Medical Association has definitely gone on record to the effect that medical service should be under the control of the medical profession. We do not think any physician can disagree with this tenet of the American Medical Association. If medical service plans are to be perfected, the medical profession must have the guidance of these new methods of medical practice.

SUBCUTANEOUS USE OF SODIUM SULFATHIAZOLE

One of the difficulties the practitioner of medicine has had with the use of the sulfa compounds is that apparently they can be administered only by mouth or injection into a vein. The oral administration of the sulfonamides in most instances is thoroughly satisfactory. Occasionally, however, there is a patient to whom, because of severe delirium or coma, nothing can be given by mouth. Occasionally the patient is noncooperative and will refuse to take the medicine, and once in a while the effect of the drug is to produce vomiting. In these instances it has been customary to give the sulfa drug in the form of a sodium salt into the vein, but this method is not entirely satisfactory by any means. A peak concentration is soon reached and then falls rapidly. The objective to be reached in the use of the sulfa drugs is to obtain the proper therapeutic blood level and then to hold this level at a certain fixed figure. This can not be done when the drugs are given intravenously.

Because of the several difficulties enumerated in regard to the two standard methods of giving the sulfonamides, the physician should be pleased to know that experimentally and clinically it has been shown that sodium sulfathiazole may be given safely subcutaneously. Lyons, Climenko, and Gorham* reported upon a series of 200 patients to whom they gave sodium sulfathiazole by the subcutaneous route. They preceded the clinical use of the drug with a study in experimental animals of the local reactions that have been the barrier to the use of the sulfa preparations intramuscularly or subcutaneously. They demonstrated in a series of rats that the local reaction was minimal or harmless up to as high as a 10 per cent aqueous solution of the anhydrous sodium sulfathiazole. They, therefore, concluded that it would be possible to give the sulfathiazole to patients subcutaneously. So far they have given it in over 200 instances in various diseases, and in age groups extending from three weeks to 82 years of age. They recommend the administration of a 0.5 per cent aqueous solution of sodium sulfathiazole in quantities as high as 2,000 cc. and giving it at the rate of approximately 100 cc. per hour. There were no serious reactions in any of their patients, and only in eight was it necessary to use a hot water bottle because of slight swelling and tenderness locally. The authors state that blood concentrations were somewhat lower than if the drug had been given orally. However, it should be pointed out that the blood concentration level is by no means a satisfactory index as to the efficacy of the treatment. Sulfadiazine may have low levels in the spinal fluid, although the levels are higher than that of sulfathiazole, but nevertheless the patient with meningitis will get well when these sulfonamide preparations are given orally or intravenously.

Unfavorable side effects were not often observed when the drug was given under the skin. There were two instances of anuria and four of gross hematuria, and 30 patients showed occult hematuria. Three patients had a mild secondary anemia.

Lyons and his co-workers have shown that the sulfonamides may be given under the skin. This method of administration may be beneficial in more ways than one, because the hypodermoclysis which is given concomitantly may provide sufficient fluid to eliminate the kidney complications of sulfathiazole and sulfadiazine administration.

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*Lyons, J. A. A., Climenko, D. R., and Gorham, L. W.: The subcutaneous administration of sodium sulfathiazole in various clinical conditions, Am. J. Med. Sci., 205: 703, 1943.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

AMERICAN FEDERATION FOR CLINICAL RESEARCH, NEW ORLEANS SECTION

The following abstracts are of papers presented at the meeting of the Federation held at the Hutchinson Memorial, Tulane Medical School, April 7, 1943.

The Electrocardiographic Ischemia-injury Pattern Produced in Dog by Temporary Occlusion of a Coronary Artery. (Robert H. Bayley, M. D., John S. LaDue, M. D., and Dorothy J. York, B. S.—From the Department of Medicine of the School of Medicine of the Louisiana State Medical University, New Orleans and from the Heart Station of the Charity Hospital of Louisiana at New Orleans.)

When a segment of the anterior descending branch of the dog's left coronary artery is dissected through a small hole in the pericardial sac and a ligature passed around the artery, the vessel may be briefly occluded totally or subtotally as desired by tension on the ligature, and accordingly, the muscle ordinarily irrigated by its terminals undergoes the development and recovery of various grades of local ventricular ischemia and injury. The associated electrocardiographic changes are the object of the present study. The periods of occlusion produced have not usually exceeded 90 seconds, or about one-twelfth of the time required to produce minimal myocardial changes. In several minutes after cessation of occlusion, the altered physiological state of the involved myocardium returns to normal as evidenced by its produced electrical effects. It is clear, therefore, that while myocardial infarction is not produced, the order of development of the physiological changes up to the point at which occlusion terminates is the same as would occur if infarction were produced by more prolonged occlusion.

Records of the produced electrical effects are made with a galvanometer of the Einthoven type of recording continuously before, during, and after occlusion. The lead employed is of the essentially unipolar variety in which the exploring electrode is contacted with the pericardial sac superjacent to the terminals of the dissected artery and the indifferent electrode is contacted with the left foreleg.

The electrocardiographic patterns obtained displayed two kinds of changes. Primary T-wave changes ascribed to local ventricular ischemia are the first to appear and the last to disappear. The ischemia phase of the ischemia-injury pattern is ordinarily transgressed in 30 seconds after sudden complete occlusion. Oppositely directed displacements of the diastolic base-line and the RS-T junctions are the second kind of change to appear and the first to disappear, and are ascribed to the flow during diastole of a current injury which temporarily reverses its direction of flow during systole. The recordings are referred to as ischemia-injury patterns. They show, contrary to general opinion, that the initial electrocardiographic changes associated with myocardial infarction are primary T-wave changes ascribed to local ventricular ischemia. They demonstrate much more rapidly the same kind of electrocardiographic changes which are temporarily associated with myocardial infarction and thereby demonstrate that these kinds of changes are not necessarily diagnostic of myocardial infarction. In contrast to the ischemia-injury effects are certain well recognized permanent QRS changes associated with myocardial infarction which are diagnostic of infarction but which are not observed in the ischemia-injury pattern.

In Vitro Studies of Oxidizing Agents on Clostridium Welchii; Preliminary Report. (Maxwell F. Kepl, M. D., Guy Caldwell, M. D., and Alton Ochsner, M. D.—From the Department of Surgery, Tulane University, School of Medicine, New Orleans.)

This study was undertaken in order to determine whether or not some of the better known oxidizing agents, such as potassium permanganate, calcium permanganate, potassium persulfate, calcium peroxide, zinc peroxide, sodium nitrate, potassium dichromate, sulfanilamide powder, sodium dichromate, sodium perborate, and sodium thiosulfate, would have any effect in vitro on *Cl. welchii* meat broth cultures suspended in a human plasma medium. The conditions were similar to those found in contaminated wounds. Solutions of magnesium sulfate were used as controls. Various dilutions of these substances, ranging from 1-10 to 5-5120, were made under sterile conditions so that the volume was always 1.0 cc. To this was added immediately 1 cc. of human plasma containing 0.1 cc. of a 24 hour meat broth culture of actively growing *Cl. welchii* bacteria which had a calculated number of 163 x 10^9 bacteria per cc. by the use of a standard bacterial counting chamber.

The contents of the tubes are well mixed and allowed to stand at room temperature of one hour, at the end of which time the entire contents of each tube were placed in a tube of sterile milk, well mixed, and incubated for 24 hours. They were observed at 8, 16, and 24 hour intervals for beginning stormy fermentation. Control tubes without inoculation showed no change after such periods of incubation, while tubes inoculated with pure cultures of *B. welchii* showed beginning fermentation as early as 7 hours after inoculation with 0.1 cc. of *B. welchii.*

Under the conditions of this experiment, it was noted that sodium perborate, potassium perman-

ganate and potassium dichromate were the best inhibitors of bacterial growth at the end of 8 hours incubation. Calcium permanganate and calcium peroxide gave inhibition in the highest dilution (1 to 40) at the end of 24 hours, with potassium dichromate and zinc peroxide next. Sulfanilamide showed no bacteriostatic activity at the end of 24 hours. It was noted that there was present a definite delay in fermentation in those tubes that had the higher dilutions of most of the oxidizing agents in the first 8 hours of observations, even though at the end of 24 hours the fermentation in these tubes would be called positive.

Early Immunization Against Pertussis. (Wallace Sako, M. D.—From the Department of Pediatrics, Louisiana State University School of Medicine and the Charity Hospital of New Orleans.)

The earliest age at which active immunity against pertussis can be produced is unknown. A study was therefore conducted to determine the effect of early immunization against pertussis (A) on the agglutination titer and (B) on the incidence of the disease in those children who have been immunized and have been intimately exposed to the disease within the family.

MATERIAL AND METHODS

A. Agglutination titer. Three hundred young infants were vaccinated with Lilly's alum precipitated pertussis vaccine (40 billion per cc.) according to the following schedule:

Age	Dose
1-2 months	0.2 cc
2-3 months	0.3 cc
3-4 months	0.5 cc

All injections were given deep subcutaneously following the recommendation of Bell. Rapid agglutination tests were conducted according to the instructions supplied me by the Eli Lilly and Company.

B. Incidence of pertussis. Nine hundred and twenty-eight cases were immunized according to the above schedule. Nine hundred other infants of similar age were not immunized and these served as controls. Both the early immunized group and the control group were followed for a period of one year.

RESULTS

A. The agglutination titers obtained are summarized in Table 1.

A glance at the above table shows that three to four months after immunization over 60 per cent of 300 young infants develop agglutinins in the blood.

B. Incidence of pertussis following intimate familial exposures.

1. Test group. Of the 928 young infants immunized in the first half year of life, 63 were intimately exposed to cases of pertussis in the family. There were 97 cases of pertussis in the 63 families where pertussis occurred. Twelve of the sixty-three exposed immunized young infants contracted mild pertussis without complications or deaths. Of the twelve infants contracting pertussis, none had a strong agglutination titer, four had weak agglutination titers, and eight had negative titers.

2. Control group. Of the 900 infants who were not immunized 42 were intimately exposed to other cases of pertussis in the family. There were 57 cases of pertussis in the 42 families where pertussis occurred. Thirty-three of the 44 exposed infants contracted pertussis with three deaths, eleven pneumonias successfully treated, and nineteen average cases.

SUMMARY

1. Over sixty per cent of 300 young infants immunized against pertussis in the first half year of life showed agglutinins in the blood.

2. Of 928 infants immunized against pertussis in the first half year of life, twelve developed mild pertussis with no complications or deaths. Of the 900 non-immunized infants who served as control, 33 contracted severe pertussis with three deaths and eleven pneumonias.

TABLE 1

PERTUSSIS AGGLUTINATION TITERS IN 300 YOUNG INFANTS IMMUNIZED WITH ALUM PRECIPITATED TOXOID FORTY BILLION PER CC. (LILLY).

	After second injection but before third injection	Interval after completion of immunization				
		1 mo.	2 mos.	3 mos.	4 mos.	6 mos.
Weakly positive	91	96	116	123	132	120
Strongly positive	7	22	52	65	61	59
Total positive	98 (32.7%)	118 (39.3%)	168 (56%)	188 (62.7%)	193 (64.3%)	179 (59.7%)

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

June 1. Eye, Ear, Nose and Throat Staff, 8 p. m.
June 2. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Mercy Hospital Staff, 8 p. m.
June 3. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
Executive Committee, Baptist Hospital, 8 p. m.
June 7. Board of Directors, Orleans Parish Medical Society, 8 p. m.
June 9. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
Touro Infirmary Staff, 8 p. m.
June 14. Scientific Meeting, Orleans Parish Medical Society, 8 p. m.
June 15. Charity Hospital Medical Staff, 8 p. m.
June 16. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.
June 17. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
June 18. I. C. R. R. Hospital Staff, 12:30 p. m.
June 21. Hotel Dieu Staff, 8 p. m.
June 22. Baptist Hospital Staff, 8 p. m.
June 23. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
French Hospital Staff, 8 p. m.
Hutchinson Memorial Clinic Staff, 8 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.
June 24. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
June 25. L. S. U. Faculty Club, 8 p. m.
June 30. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

During the month of May the Society held one regular scientific meeting and one joint meeting with the New Orleans Gynecological and Obstetrical Society. The program of the regular meeting, which was held Monday, May 10, was as follows:

Some Unusual Infections of the Newborn—Report of Cases, by Dr. Ruth G. Aleman.

Indications for Vitamin Therapy, by Dr. Grace A. Goldsmith.

Drs. Rena Crawford and Suzanne Schaefer opened the discussions on Dr. Aleman's paper, and Drs. Lucy Scott Hill and Marie Stanbery opened the discussions on Dr. Goldsmith's paper.

The program of the joint meeting, which was held Monday, May 24, was as follows:

Tuberculosis and Pregnancy, by Dr. Edgar Hull (by invitation).

The Diagnostic Confusion between Acute Appendicitis and Certain Gynecologic States, by Dr. Frederick F. Boyce (by invitation).

Diphtheria of the Cervix Uteri, by Dr. Woodard D. Beacham.

At the recent annual meeting of the Louisiana Tuberculosis Association Dr. Sydney Jacobs led the symposium on tuberculosis control among special groups in which participants and their subjects were as follows: Dr. Chester A. Stewart, college students; Dr. S. S. Pinto, industrial workers; and Dr. W. D. Beacham, women. Methods in community tuberculosis problems were discussed by the following: Dr. Edgar Hull, tuberculin testing; and Dr. R. Alec Brown, survey x-ray methods. Drs. Julius Lane Wilson and B. I. Burns presided.

Dr. H. W. Kostmayer was recently elected to Omicron Delta Kappa, national honorary leadership fraternity.

At the recent regional meeting of the American College of Physicians the following took part in the program: Drs. Joseph S. D'Antoni, Thomas P. Findley, George W. McCoy, George R. Meneely, John H. Musser and John R. Schenken.

Dr. John H. Musser presented papers on the War and Medical Education, and the Doctor's Heart at the meeting of the Arkansas State Medical Society in Little Rock, April 19-20.

Dr. M. Carl Wilensky was recently elected president of the staff of the Eye, Ear, Nose and Throat hospital. Dr. C. S. Wood was named secretary.

RESOLUTIONS ADOPTED BY THE ORLEANS PARISH MEDICAL SOCIETY

DR. GEORGE STEWART BROWN

The Orleans Parish Medical Society records with sadness the loss of our noble and esteemed comrade, Doctor George Stewart Brown. To have been an active member of the New Orleans medical profession for forty years and the dean of the New Orleans Pharmacists for fifty-five years, measured in terms of service would fill the cup of more than one full, long and busy life.

Records only bespeak a small part of his activities. His life was a wealth of untiring, constant, devoted service—service to his fellowmen, service as a teacher and service to his God.

Service to his fellowmen can best be recorded in his fight against tuberculosis, founding with

others the anti-tuberculosis society thirty years ago. Service as a teacher is recorded in his long professorship at Tulane University. Service to his God is recorded in the long life as an aggressive churchman, always in the front line of the Battle for Christ. Service such as that of Doctor George Stewart Brown is "the price we pay in this world for the place we have in the next."

In the loss of Doctor George Stewart Brown our profession has lost an exemplary doctor, a beloved teacher, a fearless Christian leader, one who was an inspiration to all who knew him. We have sustained a great loss.

DR. J. HOLMES SMITH

The Orleans Parish Medical Society records with sorrow the loss of our esteemed colleague and friend. Untimely was death in abruptly closing the span of his life. However, he will live long in the memory and hearts of those he has left behind. His gentle manner, his quiet voice, his genuine humility and real scientific pronouncements will keep him living until those who knew him have long since passed away.

Dr. Smith was a scholar and teacher of the first rank, although at times his beautiful simplicity and admirable humility almost obscured it.

We record the many citations of merit he received when he came to fight the bubonic plague twenty-two years ago. We record his kindness of heart, delicacy of feeling and thoughtfulness for others. We record the steadfastness of purpose and unconquerable determination to solve the many riddles that cross the daily path of the true physician. Nothing could interrupt or retard his efforts when duty called.

We know that only the Christian God Whom he served so well can comfort us in this hour of sadness.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY OF THE LOUISIANA STATE MEDICAL SOCIETY—1943

Two meetings of the House of Delegates were held on May third in Baton Rouge, Louisiana.

There were 58 delegates, 9 past presidents (4 of whom served as delegates), and 15 officers present.

Minutes of the 1942 meeting of the House of Delegates and of meetings of the Executive Committee held since the 1942 meeting were adopted as published in the report sent to all members of the House.

Recommendations Contained in Reports

President—1. Continuation of Liaison Committee composed of the president, secretary and one member, the purpose of which is to coordinate public health activities and the work of the State and City Boards of Health in cooperation with the State Medical Society. — This recommendation was amended to include that Dr. David E. Brown, Director of the State Department of Health be thanked for his willingness to cooperate. — Approved. 2. That every physician should contribute annually to the support of his profession the sum of one hundred dollars; $25.00 to his local society, $25.00 to the national society, and $50.00 to his state society. — Motion was made and carried that discussion be confined to dues for membership in the State Society. — Motion was made and carried that the dues be increased to $25.00 a year. 3. That action taken by the president in regard to unalterable objection to utilization of beds and other facilities of the Charity Hospital at New Orleans for private pay patients, be approved. — Amended to include other state hospitals. — Approved. 4. That the House of Delegates affirm the president's comments regarding the proposed federal plan for the care of wives and children of certain service men. — Disapproved. Motion was made and carried that the president appoint a committee from the Executive Committee to work out a plan agreeable to the profession and further authorize the Executive Committee to put that plan into effect.

Committee on Cancer — 1. To reaffirm the activities of the Cancer Committee. — Approved. 2. That the Secretary-Treasurer write letters of appreciation to the editors of the New Orleans, Ba-

ton Rouge, Lake Charles, Monroe, Alexandria and Shreveport newspapers for articles published on cancer; also to the managers of broadcasting stations in these centers for the generous allocation of time to members of the profession and Field Army officers. — Approved. 3. That a letter of thanks be sent to Dr. David E. Brown, Director of the Louisiana State Department of Health for the donation of space in the New Orleans Medical and Surgical Journal for the publication of monthly articles on the subject of cancer. — Approved. 4. That a letter be sent to the Louisiana Division of the Women's Field Army commending them for having worked so courageously, persistently and intelligently in our war on cancer. — Approved.

Committee on Expert Testimony — 1. That a Committee on Medical Testimony be made a standing committee of the Society, consisting of five members with overlapping terms. — Approved.

Committee on Hospitals — 1. Chronic surgical and medical cases should not be kept in private hospitals over long periods of time as this definitely diminishes the turnover in the institution. — Approved. 2. Boarders, that is, members of family who wish to remain with patients, should definitely not be allowed to occupy beds in the hospitals. — Approved. 3. If the profession would insist on early transfer of post-operative cases to their homes by ambulance, we would materially increase the elasticity of our bed capacity. — Approved. 4. We should discourage private institutions from utilizing their beds at the present time for charity cases, as these might well be taken care of in the state institutions. — Approved. 5. Should the vacant beds at Charity Hospital be made available for the handling of private civilian practice, the administration as suggested by Dr. Daly, should be under an entirely separate management from the Department of Institutions.—Deleted from report. 6. That some effort be made to alleviate the present situation resulting in a shortage of nurses by obtaining the restoration of the two shifts, that is, a twelve hour duty, rather than the present three shifts of eight hour duty for private nurses. — Approved. 7. The utilization of practical nurses in hospitals during the war emergency, under proper supervision; also utilization of the nurses' aides who have been trained by the Red Cross. — Use of practical nurses disapproved; use of nurses' aides approved. 8. As far as possible the institutions in which interns begin their service should try to provide places among their resident staff for their former interns. — Approved. 9. That as far as possible the Louisiana State Medical Society encourage the hospitals throughout the State of Louisiana to adopt a uniform nomenclature; by doing so statistical compilation could be more easily obtained. — Approved. 10. That the records of all hospitals within the state be kept up to the standard as recommended by the American College of Surgeons and the American Medical Association. — Approved. 11. That hospitals see to it that all ambulances serving their institutions be equipped in accordance with the recent state law.— Deleted from report. 12. That all hospitals be properly equipped for the emergency care of the injured; that each hospital have equipment for fracture care and each institution be requested to meet the requirement of the Fracture Committee of the American College of Surgeons, with reference to splints and traction and the like. — Deleted from report. Motion was made and carried that the hospitals throughout the state be notified of the recommendations adopted; also that other groups be notified of approval of recommendations which will affect them.

Louisiana State Board of Medical Examiners — 1. That the House of Delegates endorse the stand that the State Board of Medical Examiners has taken against issuance of temporary licenses without examination or other requirements. — Approved.

The following reports, which contained no recommendations, were accepted: Committee on Secretary-Treasurer's Report; Council; Councilors of First, Second, Third, Fourth, Fifth, Sixth, Seventh and Eighth Districts; Committees on Care of the Indigent Physician, Journal, Maternal Welfare, Medical Defense, Mental Health, Nutrition, Public Policy and Legislation, Resolutions, Walter Reed Memorial, To Prepare History of L. S. M. S., To Study Rearrangement of Annual Meeting Programs.

Communications:

A letter received from Dr. C. C. deGravelles, President-elect, expressing regret in regard to his inability to be present due to illness, was read and motion was made and carried that a committee be appointed to send an appropriate telegram to Dr. deGravelles.

A communication from the Orleans Parish Medical Society concerning endorsement of a National Conference on Medical Service was considered and motion was made and carried that a copy of the complete file be sent to members of a special committee to be appointed to study this subject, to each member of the Executive Committee, and to the Louisiana delegates to the A. M. A.

A communication received from Dr. J. E. Lawton, of Baton Rouge, concerning his rejection of membership by the East Baton Rouge Parish Medical Society, was read and motion was made and carried that this communication be referred to the Council.

A communication received from the Orleans Parish Medical Society in re deletion of dues for members in the armed service was presented and motion was made and carried that the communication be accepted and that the resolution contained therein be adopted.

Amendments:

Motion was made and carried that *Section 2 of Article VIII* of the *Constitution* be amended to

state that "the Secretary-Treasurer shall be elected for a term of not more than five years."

Motion was made and carried that *Section 6 of Article IV* of the *Constitution* be amended to state that members may obtain inactive membership "upon recommendation of the Executive Committee."

In accordance with action taken in re recommendation contained in the president's report, *Section 1 of Chapter IX* of the *By-Laws* was amended to state "Each member shall pay into the Society an annual assessment of twenty-five dollars ($25.00)."

In accordance with action taken in re recommendation of the Committee on Expert Testimony, amended to include a "Committee on Medical Testimony" as a standing committee of the Society.

Special Order:

Motion was made and carried that a telegram be sent to Lt. Governor Mouton expressing gratitude for his interest in organized medicine in Louisiana.

Motion was made and carried that the following resolution be adopted: Whereas the House of Delegates of the Louisiana State Medical Society has adopted favorably a recommendation that the members of the Louisiana State Medical Society have a copy of the boy and girl scouts' manual in their waiting rooms, be it resolved that the House of Delegates of the Louisiana State Medical Society respectfully have the Louisiana delegates request the house of Delegates of the American Medical Association to adopt a similar resolution in regard to members of the A. M. A.

The question of having corresponding library available to the members of the Society who live outside of the City of New Orleans was discussed. It was stated that such a plan is in effect at present. Motion was made that if such a service is in effect a committee be appointed to investigate the subject further and notify the doctors of the state that such a service is at their disposal.

The suggestion was offered that the name of the New Orleans Medical and Surgical Journal be changed to the Louisiana State Medical Journal, however this suggestion was not approved.

Motion was made that this House of Delegates go on record asking the state legislature to pass a law requiring a Wassermann test on both parties anticipating matrimony. After discussion motion was made and carried that this matter be referred to the Legislative Committee.

Dr. C. Grenes Cole offered his resignation as Councilor of the Second District, which was accepted.

Dr. M. D. Hargrove offered his resignation as Councilor of the Fourth District, which was accepted.

Motion was made and carried that the Fourth District be permitted to recommend to the next meeting of the Executive Committee Councilor for the Fourth District to replace Dr. Hargrove.

Election of Officers:

Dr. Val Fuchs, President-elect; Dr. M. D. Hargrove, First Vice-President; Dr. George Hauser, Second Vice-President; Dr. Kernan Irwin, Third Vice-President; Dr. John T. O'Ferrall, Councilor Second District; Dr. Guy Jones, Councilor Third District; Dr. Rhett McMahon, Councilor, Sixth District; Dr. C. A. Martin, Councilor Seventh District; Dr. W. F. Couvillion, Councilor Eighth District; Dr. A. W. Martin, Chairman of House of Delegates; Dr. A. V. Friedrichs, Vice-Chairman of House of Delegates; Dr. J. Q. Graves, Delegate to A. M. A. 1944 and 1945; Dr. E. H. Lawson, Alternate Delegate to A. M. A. 1944 and 1945.

Committees:

Scientific Work—Dr. P. T. Talbot, Chairman, Dr. Edgar Hull and Dr. R. T. Lucas.

Public Policy and Legislation—Dr. Rhett McMahon, Chairman, Dr. Emmett L. Irwin, Dr. E. L. Leckert, Dr. C. C. deGravelles and Dr. P. T. Talbot.

Journal—Dr. Leon J. Menville (3 year term) and Dr. G. C. Anderson (3 year term).

Medical Defense—Dr. S. Chaille Jamison (3 year term).

1944 Meeting:

Invitation extended by the Orleans Parish Medical Society to hold the 1944 meeting in New Orleans was accepted.

At the general meeting, immediately following the meeting of the House of Delegates, motion was made and carried that if the war is still going on next year, power be granted the Executive Committee to dispense with the scientific meeting in 1944 if they see fit.

REPORT OF COMMITTEE ON RESOLUTIONS

Whereas the Louisiana State Medical Society has enjoyed a successful business meeting of the House of Delegates, and

Whereas the success of this meeting is due to the zealous and untiring efforts and splendid cooperation of several individuals and organizations,

We therefore offer the following resolutions of cooperation:

To Dr. Kernan Irwin, General Chairman of the Committee on Arrangements, for his generous and untiring efforts which have contributed greatly to the success of the meeting.

To the East Baton Rouge Parish Medical Society, host of the meeting, for their splendid cooperation and the excellent manner in which the convention was conducted.

To the efficient staff of the Secretary's office and the Secretary-Treasurer whose careful preparation of the details of the meeting contributed much to its smooth operation.

To Dr. Val Fuchs, Chairman of the House of Delegates, for the efficient and orderly manner in which he conducted the meeting of the House of Delegates and whose many efforts of the past have now elected him president.

To the Woman's Auxiliary of the Louisiana State Medical Society whose wholehearted support and interest added considerably to the meeting.

To the commercial exhibitors whose splendid cooperation is greatly appreciated.

To the press of New Orleans and Baton Rouge for their cooperation in giving publicity to the meeting.

To Mr. Luther Currie, Assistant Manager of the Heidelberg Hotel, and other personnel of the hotel for the many courtesies extended and for their cheerful and willing attention to the innumerable calls for assistance.

We recommend that a copy of these resolutions be incorporated in the minutes of the meeting and that a copy be published in the New Orleans Medical and Surgical Journal.

Respectfully submitted,
U. S. Hargrove, M. D., Chairman
W. P. D. Tilly, M. D.
E. H. Lawson, M. D.

REPORT OF COMMITTEE ON MEDICAL DEFENSE

There have been no cases of malpractice submitted to this committee for attention since the 1942 meeting of the Society.

Communications have been received from our Attorney concerning cases which have been pending and exceptions were filed in April, 1942 in a suit brought against a New Orleans member.

In the files of the Society is financial report of the Medical Defense Fund indicating amount in the savings account and the trust fund on January 1, 1943.

S. Chaille Jamison, M. D., Chairman.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The Nominating Committee of The New Orleans Graduate Medical Assembly has nominated the following members for office for the year 1943-1944:

Dr. H. W. E. Walther, President-elect.
Dr. William B. Clark, First Vice-president.
Dr. James K. Howles, Second Vice-president.
Dr. Edgar Hull, Third Vice-president.
Dr. Joseph S. D'Antoni, Secretary.
Dr. Wm. H. Gillentine, Treasurer.
Dr. Gilbert C. Anderson, Director of Program.
Dr. Charles L. Brown, Assistant Director of Program.
Dr. Eugene B. Vickery, Assistant Director of Program.

Executive Committee
Dr. Edward L. King (one year term).
Dr. Dean H. Echols (two year term)
Dr. Donovan C. Browne (two year term)

The following officers elected in 1942 for the coming year are as follows:

Dr. Oscar W. Bethea, President.

Executive Committee
Dr. H. Theodore Simon (retiring president).
Dr. H. Ashton Thomas.

TULANE IVY DAY PROGRAM

The annual Ivy Day program of the Tulane University School of Medicine was held Thursday, April 29. The Ivy Day Address was delivered by Dr. Chaille Jamison, who spoke feelingly of the future of the medical profession.

It is a pleasure to announce that the Walter Reed Memorial Medal of the Louisiana State Medical Society was presented by Dr. Emmett L. Irwin, President of the organization, to Dr. Samuel Adams Trufant III, of New Orleans.

The Sidney K. Simon prize was won by Dr. Marcel Patterson, and Dr. William Duncan Davis, Jr. was awarded the Isidore Dyer Medal. Other prizes were obtained by Dr. Charles M. Wilson, Dr. Jerry B. Gwin, and Dr. George N. Irvine.

TOURO INFIRMARY MEDICAL STAFF MEETING

At the regular monthly meeting held Wednesday, May 12, at 8:00 p. m., the following program was presented. Dr. Gilbert Balkin discussed Leptospirosis; Dr. Evri Mendel gave a case report on the Surgical Treatment of Dysmenorrhea. The final paper was presented by Dr. Sam Simkin on Acute Osteomyelitis.

OCHSNER CLINIC STAFF MEETING

The Ochsner Clinic Staff meeting was held on Friday, May 21 at 8:00 p. m. The program consisted of the following presentations: Diagnosis of Paresis by Dr. George Leiby; Bilateral Recurrent Nerve Paralysis—Suture of Injured Nerves on Each Side. This was a movie film which was discussed by Dr. Penick. The third feature of the program was a movie demonstration of Combined Fusion of Lumbosacral Joint and Hemilaminectomy for Removal Herniated Disc, which was discussed by Dr. Dean Echols.

STAFF MEETING OF BAPTIST HOSPITAL

The regular monthly meeting of the clinical staff of the Southern Baptist Hospital was held Tuesday, April 27. The program consisted of a report of a series of cases of Thrombo Ulcerated Colitis by Dr. D. N. Silverman. The next paper was a report of a case of Adrenal Tumor Syndrome by Dr. T. C. Sherwood.

AMERICAN FEDERATION FOR CLINICAL RESEARCH

The New Orleans section met Wednesday, April 28, 8:00 p. m., at the Louisiana State University Medical Center, 1542 Tulane Avenue, New Orleans.

Program:

1. Recent Developments in the Diagnosis of

American Trypanasomiasis, by Harry Senekjie, M. D.

2. The Electrocardiographic Ischemia in Injury Pattern Produced by Temporary Occlusion of a Coronary Artery, by Robert H. Bayley, M. D., John S. LaDue, M. D., Dorothy York, B. S.

3. The So-called Diphtheroid Streptococcus from Cases of Subacute Bacterial Endocarditis, by Carl Lamanna, Ph. D.

MAES HONORED

Dr. Urban Maes was recently honored by his professional colleagues, being elected Vice-President of the American Surgical Association, which met early in May in Cincinnati, Ohio.

NEWS ITEMS

Dr. Chester A. Stewart, Director of the Department of Pediatrics of the Louisiana State University School of Medicine, left New Orleans on May 4, 1943, for St. Louis, Missouri, where he will attend a meeting of the board of the National Tuberculosis Association on May 5th and 6th. Dr. Stewart has been nominated director-at-large of the National Tuberculosis Association for a two-year term, beginning on May 6, 1943.

UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surgeon W. H. Mills has been ordered from New Orleans to Galveston, Texas.

Past Asst. Surgeon E. A. Gillis has been ordered to New Orleans from Oklahoma City.

Asst. Surgeon C. C. Kuehn has been relieved from duty at Lake Charles and sent to the Beauregard Parish Health Unit at DeRidder.

Past Asst. Surgeon H. C. Phillips and Asst. Surgeon B. H. Raymond have been relieved from duty in New Orleans and ordered respectively to Mobile and to Washington.

Surgeon R. T. Westman has been sent from New Orleans to San Francisco, Calif.

INFECTIOUS DISEASES IN LOUISIANA

The morbidity report of the Louisiana State Board of Health shows that for the week ending April 17 diseases reported in numbers greater than 10, and excluding syphilis and gonorrhea, showed that measles led the list with 84 instances, followed in order of frequency by 31 cases of pulmonary tuberculosis, 22 of cancer, 18 each of mumps and chickenpox, and 12 of influenza. Most of the cases of measles were reported from military sources. Of the rarer diseases, two cases of typhus fever were listed from Cameron Parish. In this particular week the report of the number of cases of gonorrhea and syphilis for the previous four weeks are recorded. There were 697 cases of syphilis listed and 1,038 of gonorrhea. For the week which ended April 24, measles again led with 141 cases, followed by 48 of mumps, 56 of German measles, 21 each of pulmonary tuberculosis and chickenpox. There were 9 cases of meningococcus meningitis reported at this time. For the week which came to a close May 1, there were 40 cases each of measles and mumps, 19 of cancer, 16 of pulmonary tuberculosis, and 11 of chickenpox. Three cases of typhus fever were reported and two of meningococcus meningitis.

SHORTAGE OF LABORATORY ANIMALS

There is a serious shortage of laboratory animals for use in hospitals and medical schools. The War Production Board will probably be willing to give priority to materials necessary to raise small animals because the need is so great. Guinea pigs, rabbits, rats and frogs are all lacking. Particular difficulty is now being felt in obtaining cats for the purpose of assaying the potency of digitalis preparations. This is a standard method now required and cats are essential for the carrying out of the assay.

Physicians might interest some of their younger male patients in the breeding of some of these laboratory animals. It would be interesting and profitable.

FROM DEPARTMENT OF AGRICULTURE

The present shortage of glycerine and the necessity of issuing available supplies for essential war needs has made it necessary to deny the use of glycerine in many instances. Many former users of glycerine, who are now unable to secure supplies, are using substitute materials where they are available.

In a recent memorandum addressed to all consumers of glycerine we discussed the reasons for our inability to allocate glycerine to all users, as well as the methods for obtaining glycerine for approved end uses. We also mentioned in this memorandum the need of working out substitutes where possible. In using substitutes all consumers must investigate the toxicity of the substitute since it is an established fact that certain substitutes are definitely toxic. Among these toxic substitutes are:

Ethylene glycol
Diethylone glycol (diglycol)
Carbitol
Polyethylene glycol

and under no circumstance should these or toxic substitutes be used in any product whether food, drug of cosmetic which is likely to be taken internally or otherwise absorbed by external application.

Furthermore, a number of proprietary glycerine substitutes have been offered for sale and before using them, inquiry should be made of the manufacturer in order to determine whether or not any of the above compounds or other toxic substitutes are present. When in doubt as to the use of any of these substitutes in food, drug, or cosmetic preparations, inquiry should be made of the au-

thorities in charge of administering the Food, Drug and Cosmetic Law.

DOCTORS' HOUSEHOLDS URGED TO SET AN EXAMPLE IN WASTE FAT SALVAGE

The importance of saving waste household fats in order to salvage their glycerine content should be apparent to every physician. The doctor's kitchen, like that of every other family in town, can supply at least a tablespoonful of fat a day—from meat drippings, from rendered trimmings or fat skimmed from the soup kettle and no longer good for food. If that much were retrieved in every household and taken to the meat stores which collect the fat for the renderers, the amount saved would exceed the national goal of 200,000,000 pounds for 1943.

Glycerine is desperately needed to feed the United Nations war machine, and because many of America's outside sources of fats and oils have been cut off by the war. Glycerine has an important place on the medical front, in both war and peace. It is one of the best known and widely used medical materials. There is scarcely a branch of therapeutics in which glycerine does not play a part. An average of more than three pounds of glycerine per hospital bed per year is used in our American hospitals. And an analysis of 15,063 prescriptions made prior to the war in a single American city showed that, with the sole exception of water, glycerine was the most-used liquid ingredient.

In military medicine the role of glycerine continues to grow. Even before we entered the war, large quantities of glycerine were shipped by the American Red Cross to England. In the requests made to organized medical groups in the United States for medical supplies, British authorities rated glycerine as equal in importance to surgical instruments.

Practically all the liquid sulfonamides call for glycerine. The war has given increased emphasis also to the long-established value of glycerine itself in burn therapy and surgical treatment, as well as for wound dressings. Dressings can be changed with less discomfort to the patient when they are soaked with glycerine.

The War Production Board is urging all Americans everywhere to help save the fat from which this precious liquid is made. Doctors, set an example in your community: start YOUR household saving waste kitchen fat today: Waste Fat Saving Committee.

AN EDITORIAL

The following editorial from the Marion Chronicle was recently republished in a New Orleans daily. We feel that it is worth reproducing in the Journal. It shows that some people at least appreciate what the doctors in the present day are doing for their country.

Marion Chronicle:

The medical profession hasn't done a lot of talking about the "sacrifices" its members are making. And yet doctors, perhaps more than any other group next to the service men, are making real sacrifices in this war. Thousands of them have voluntarily given up their practices. They live in the fox holes with the soldiers. They fight and die with the navy and the marines. They perform miracles amid blood and suffering. Gone is the business for which they spent so many years in preparation, often on a financial shoestring. The doctors left at home are making sacrifices too. Men who should be enjoying the leisurely aftermath of useful careers are back in harness working at a killing pace. They are on duty 24 hours a day—and they don't yell for time-and-a-half when Mrs. Jones is having a baby at 3 a. m. The doctors are carrying out the tradition of American medicine in every emergency. Their example might well be followed by workers in other fields.

WOMAN'S AUXILIARY

The Third of May was an important, busy day for members of the Woman's Auxiliary who were fortunate enough to be in Baton Rouge for the one-day State meeting. Sixty-one members, exclusive of the Baton Rouge group, registered at convention headquarters at the Heidelberg Hotel, and were furnished transportation to the L. S. U. campus, where the business sessions were held in the handsome, impressive Law School building.

With Mrs. Clarence B. Erickson presiding in her efficient manner, the morning session was snappy and interesting with good reports given by officers and committee chairmen. At one o'clock we crossed the lawn to the Faculty Club adjoining the Law building and there, in a flower adorned lounge, were served a most delicious luncheon.

Mrs. Richard H. Clark of Hattiesburg, Mississippi, President of the Auxiliary to the Southern Medical Association, was an honored guest and made an impressive talk on plans of the Southern Auxiliary for the part of its members in the war effort. Mrs. Sam Houston Jones, wife of Louisiana's Governor, was also a luncheon guest and on being introduced extended a gracious invitation from Dr. and Mrs. J. D. Frazer of De Ridder, and from "Sam" and herself to all guests present to attend a reception at the Executive Mansion that night.

Others at the Speakers' table were Mrs. Erickson, Mrs. George Taquino, incoming president, Mrs. Aynaud F. Hebert, immediate past president, Mrs. Felix Boizelle, president of the East Baton Rouge Auxiliary, our hosts, and your scribe who served as toastmaster. Mrs. Arthur David Long of Baton Rouge, general chairman of the Convention, should have been there, but she was so busy seeing that every one else was having a good time, that she would not be seated. However, she was stopped, introduced, and given generous applause.

At the afternoon session, following more reports and a few business details, Mrs. Rhodes Spedale of Plaquemine was unanimously elected president-elect, to take office in 1944. The other officers will retain their present positions through the coming year with the exception of Mrs. C. R. Gowan of Shreveport. She resigned as she felt that Mrs. Taquino should have a treasurer from New Orleans.

Dr. Emmett Irwin, President of the State Medical Society, paid a brief visit to the Auxiliary, telling of his pleasure in working with them during the year, and of the plans made for a full-length convention next year.

At the conclusion of the business of Mrs. Erickson's administration, she inducted into office her successor, Mrs. George Taquino, who made a gracious little talk, bespeaking the loyalty and co-operation of all members and pledging her own best efforts to the work of the Auxiliary. Mrs. Taquino appointed Mrs. Paul LaCroix of New Orleans to succeed Mrs. Gowan as treasurer and Mrs. Waldemar Metz, also of New Orleans, to serve as her corresponding secretary. It will be remembered that this is an appointive office, not an elective one.

At four o'clock the Baton Rouge Auxiliary entertained at a lovely tea and garden party in honor of Mrs. Taquino, at the home of Dr. and Mrs. Cecil Lorio on Dalrymple Drive. The guests lingered long, enjoying the chance to relax, to chat with friends, the cooling refreshments, and delighting in the beautiful home and garden of the hosts.

Many Auxiliary members attended the evening session of the Medical Society and heard excellent, thought-provoking addresses by Dr. Irwin and Governor Sam Jones. Then both groups attended the reception so graciously tendered them by Governor and Mrs. Jones and their relatives, Dr. and Mrs. J. D. Frazer. Mrs. Frazer said she and the Doctor realized that the convention would probably never be held in De Ridder and they wanted that opportunity to entertain the doctors and their wives. A delighful courtesy it was, too, and one long to be remembered by those present.

So the 1943 one-day convention came to a close. It was a success in every way and Mrs. Boizelle, president, and Mrs. Long, chairman of entertainment, together with every member of the East Baton Rouge Auxiliary who worked so untiringly for our comfort and pleasure and that the business of the convention might go smoothly, have our sincere gratitude and appreciation.

So, too, ended the administration of Mrs. Erickson. Throughout a trying year she has guided the affairs of the group wisely as the record shows, and it has been a pleasure to work with her. Certainly no meeting over which Gertrude Erickson presided could ever be said to be dull.

Finally, this issue brings to a close the journalistic efforts of this writer. She thanks you for your patience and long-suffering. Mrs. M. C. Wigginton of Hammond will be your new chairman of Press and Publicity. Won't you kindly co-operate with her? Send her your items of interest and give her all the help you can, for after all, if you do not furnish the news she can not report it.

MRS. JAMES W. WARREN,
Chairman of Press and Publicity.

BOOK REVIEWS

Familial Nonreaginic Food Allergy: By Arthur F. Coca, M. D. Springfield, Ill., Charles C. Thomas Co., 1943. Pp. 160, 20 Tables, 12 Charts. Price, $3.00.

Medical men and allergists have long suspected that many vague syndromes and clinical symptoms are essentially allergic in nature. This new method of approach that Dr. Coca has developed may throw new light on various conditions which we feel belong to this category. This book is short and well worth our reading, and is the result of many years of patient investigation by the author.

In his first chapter he distinguishes the following four categories of allergic disease:

1. Atopy. In this group he includes bronchial asthma, hay fever, and atopic dermatitis. In these three conditions "atopic reagins" are present.
2. Hypersensitiveness of infection.
3. Serum disease.
4. Contact dermatitis.

Dr. Coca suggests another category which he labels "Familial Nonreaginic Food Allergy". He differentiates this condition from the atopic variety by the following four main points:

1. The hereditary influence controlling its occurrence is independent of the atopic inheritance.
2. Allergic antibodies (reagins) are not demonstrable.
3. Many of the symptoms are not represented in the atopic group.
4. The allergic reaction practically always causes acceleration of the pulse.

He qualifies the title by stating that the excitants of the condition may not be foods but may be drugs, metals, or inhalants. He holds that a positive personal and family history, in the presence of a high maximal pulse rate (90 or more), and a wide range of the pulse rate (20 or

more), is characteristic of non-reaginic food allergy. He has observed that the pulse rate shows an increase after the ingestion of the food to which the patient is allergic. A strong familial tendency has been noted.

There is a large group of symptoms which he believes due to this variety of allergy, but to list them out in detail would make this review too lengthy. As an example, I might mention that he has helped many cases of migraine by the application of this method. Some of our so-called "intrinsic asthmatics" may fall into this group. Nervousness, urticaria, dizziness, neuralgia, indigestion, epileptiform seizures, are but a few of the many varieties. To sum it all up, I might make the observation that we now may be able to recognize many conditions as being allergic in origin which we had merely suspected of being so in the past. Many of the past failures of allergy have been due to the fact that our skin tests were not productive of helpful information. As an example, a patient may know definitely that certain foods cause migraine but the skin tests may have been entirely negative. By this method the allergic substances may be identified if the patient is shown to have non-reaginic food allergy. Dr. Coca has also done some interesting work to show the relationship of hypertension to this form of allergy. He considers that a primary cause of initial renal ischemia may be intracapular pressure due to an allergic edema localized within the kidney. He studied a group of nine patients and observed a fall in blood pressure in seven of them.

The suggestion is made that a generalized allergic edema may be a predisposing cause in cold susceptible individuals.

Patients may be allergic to a large number of substances, and he distinguishes "Major" and "Minor" allergens. There is also a very interesting discussion on the value of histamine therapy in the treatment of these conditions.

The opinion has been expressed that the practice of medicine may be considerably affected by the findings of Dr. Coca, but it must be understood that this review is based on Dr. Coca's statements, and time and future work may change the viewpoints herein expressed.

HENRY D. OGDEN, M. D.

The United States Pharmacopoeia: 12th Revision; by Authority of the U. S. Pharmacopoeia Convention. Easton, Pa., Mack Print. Co., 1942. Pp. 880. Price, $11.50.

The new revision of the U. S. Pharmacopoeia has become official from November 1, 1942. Volume and scope of the book make a brief review impossible, and those who are interested in details are referred to the paper by L. F. Tice and A. E. Smith: "The New Pharmacopoeia" which appeared in the series "The Pharmacopoeia and the Physician" (Copyright, 1942, by American Medical Association). The revision contains over 650 medicinal items, of which about 160 are new additions. Over 80 articles which were listed in the eleventh revision are omitted in the new one, which is to be taken as indication of the trend towards fewer and better drugs.

GERHARD KATZ, M. D.

Burns, Shock, Wound, Healing and Vascular Injuries: Prepared Under the Auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Philadelphia, W. B. Saunders & Co., 1943. Pp. 272, illus. Price, $2.50.

This volume which is number five in the series, contains a number of chapters on Burns, Shock, Wound Healing and Vascular Injuries.

The Surgeon General of the United States Army—James C. Magee, in the foreword to the volume gives an excellent summary on what may be expected. "The text presents in compact form essential up to date and reliable information regarding military surgery."

One can further agree to every word which General Magee says in the following lines:

"These volumes represent an important addition to the field of surgical texts."

Rear Admiral Ross T. McIntire, Surgeon General of the United States Navy in a foreword states:

"A volume such as this, which contains practical and essential things, readily accessible, is a real help to a medical officer and patient."

The text is well written, clear, and concise. This volume should serve as a ready reference for civilian surgeons, because it makes accessible a great deal of valuable information of varied character in a single small volume.

ISIDORE COHN, M. D.

Warwick & Tunstall's First Aid to the Injured and Sick: Ed. by Norman Hammer, M. R. C. S. 18th ed. Baltimore, The Williams Wilkins Co., 1941. Pp. 336. Price, $2.00.

This, the eighteen edition of Warwick and Tunstall's First Aid to the Injured and Sick, edited by Norman Hammer, is an excellent volume as to text and illustrations.

The conclusions of War Gases, Air Transportation and special chapters on special types of bandaging, are particularly valuable.

As an advanced First Aid Manual, it is to be recommended highly. The charts, diagrams, and illustrations, are particularly valuable.

ISIDORE COHN, M. D.

After Effects of Brain Injuries in War, their Evaluation and Treatment: By Kurt Goldstein, M. D. New York, Grune & Stratton, 1942. Pp. 244. Price, $4.00.

This book is an amazingly precise, profound and fascinating study of the consequences of brain injuries to soldiers. While caring for great numbers of injured soldiers, the author came to the realization that the customary investigative procedures were highly inadequate. In order properly to examine, treat and attempt to rehabilitate these men new methods were required. And his extremely valuable developments and technics are reported in this splendid survey of the subject which is unique and eminently practical.

Doctor Goldstein believes there is no evidence that individuals who have early attacks of convulsive seizures, following brain injuries, necessarily suffer later from seizures and that the prognosis from early attacks is more favorable. He reports that 50 per cent of his patients who had seizures, in the first week after injury, did not develop permanent seizures and if the first seizure occurred more than four years after the injury some other condition must be considered as its cause.

In the chapter on neurologic symptoms appears a discussion of the value of the consideration of the special mental capacity of "abstraction." And in the section on mental symptoms are important observations concerning functional and organic manifestations of head and skull injuries.

This is unquestionably one of the finest works of its kind thus written. It will exert great and profound influence on the opinions of all who deal with the sequelae of head injuries. I am quite impressed with the belief that anyone who has to do with examining, evaluating the status of and endeavoring to treat persons with brain injuries requires delicate synchronization of a vast amount of medical and surgical knowledge plus a keen appreciation of the influence of the human equation.

C. P. May, M. D.

First Aid, Surgical and Medical: By Warren H. Cole and Charles B. Puestow. New York, D. Appleton-Century Company, Inc., 1942. Pp. 351. Price, $3.00.

This is a timely and comprehensive presentation of the subject of first aid and becomes particularly significant in view of the modern methods of warfare. The material is presented masterfully by 19 contributors stressing the precautions and limitations in first aid work in the introductory chapter. It is written so as to be of value to the medical student and the physician as well as persons "who have had biological, but not medical training. To furnish a background for some of the more complicated material," they "have inserted a chapter on Anatomy and Physiology early in the text." It is significantly recognized that first aid administration is necessary by other than physicians and with the present mechanization of civilian and military existence combined with air attack immediate life saving measures are necessary. The book is a practical presentation with chapters on General Principles of First Aid; Common Conditions Requiring First Aid; The Material Needed; Bandaging; Wounds; Shocks; Blood Transfusions; Injuries to Large Blood Vessels; Burns; Frost Bites; Transportation of the Injured; Fractures, Dislocations and Sprains; Compound Fractures; Compound Dislocations; Gas and Bomb Raids; Respiratory Emergencies; Injuries of the Chest; Abdominal Injuries; Emergencies of the Genito-Urinary Tract; Wounds of the Mouth, Face, and Neck; Injuries of the Scalp, Skull, Spine, and Nervous System; Medical Emergencies; The Prostrate Patient; and Civilian Versus Military Casualties. "In general the emergency conditions related to the various systems are considered in Chapters arranged according to systems." The illustrations are excellent and the book is well written.

Leroy J. Kleinsasser, M. D.

Athletic Injuries, Prevention, Diagnosis, and Treatment: By Augustus Thorndike, M. D., 2d Ed. Philadelphia, Lea and Febiger, 1942. Pp. 216. Price, $3.00.

The monograph presents the author's experience over a period of six years at Harvard's Athletic Medical Department. The book is divided into three parts. Part I concerns the prevention of injuries in athletics; Part II considers the more common types of athletic injuries; and Part III reviews the more common regional injuries, their diagnosis and treatment. The consideration of physical fitness and the prevention and treatment of athletic injuries is justly receiving increasing interest of coaches, trainers, athletes, and physicians who deal with these athletes. The monograph is excellently written and organized with a consideration of the involved physiology and anatomy, including many statistical tables. The illustrations are diagrammatic but satisfactory. This monograph should be read by all physicians who have occasion to see and treat injuries of this type.

Leroy J. Kleinsasser, M. D.

Diseases of the Liver, Gallbladder and Bile Ducts: By S. S. Lichtman, M. D., F. A. C. P. Philadelphia, Lea & Febiger, 1942. Pp. 889. Price, $11.00.

A comprehensive presentation of various aspects of the hepatic and biliary systems, written by a qualified internist, is found in this well written volume. The book clearly presents, with diagrams and photographs, the present day knowledge of the anatomy, physiology, pathology, symptomatology, diagnosis and treatment of disease states affecting these organs. A great deal of space is devoted to

the methods of performing and the interpretation of liver function tests. Some of these methods are simple and valuable as office procedures, while others are elaborate and are definitely laboratory, or hospital procedures. The disease states also are discussed with particular emphasis on chronic hepatitis.

This is a good book for the student and practitioner to be used as a reference, or as an aid in diagnosis of treatment. The bibliography is well chosen and extensive, and includes key articles in English and other languages. The book has fulfilled its purpose as a comprehensive treatise on diseases of the liver and gallbladder, having covered these subjects adequately in 889 pages. The author has presented both the preclinical and clinical aspects of the subject, but has not lost sight of the fact that the book was to be used by clinicians and not primarily by physiologists.

The book is well printed, easily readable and is to be recommended as a source book, particularly for those who do not have access to original articles.

TRAVIS WINSOR, M. D.

The Principles and Practice of Medicine, originally written by Sir Wm. Osler Bart, M. D., F. R. C. P., F. R. S.; By Henry A. Christian, A. M., M. D., LL. DD., Hon. Sc. D., Hon. F .R. C. P. (Can.) F. A. C. P. 14th Ed. New York, D. Appleton-Century Company, 1942. Pp. 1475. Price, $9.50.

The fourteenth edition of Osler's Medicine, representing the semi-centennial issue of a medical classic has now appeared. The first edition was written fifty years ago by William Osler while Physician-in-Chief of the Johns Hopkins Hospital in Baltimore. Revisions were made by him while Professor of Medicine at Oxford, assisted after 1912 by Thomas McRae, then Professor of Medicine at Jefferson Medical School in Philadelphia who revised the tenth, eleventh and twelfth editions. In 1938 the 13th edition appeared under the editorship of Henry A. Christian, then Hersey Professor of the Theory and Practice of Physic at Harvard University. Thus the editorship has passed from one distinguished physician to the next. The book is almost unique among present texts in that it is written by a single author rather than a group of specialists. It is unquestionably true however that Christian has a specialist's knowledge of each of the medical specialties and thus keeps each subject abreast of the new developments. He feels that anyone who cannot duplicate his prodigious energy and amazing memory is merely lazy. All in all the book is excellent and its early luster is preserved undimmed.

VINCENT J. DERBES, M. D.

Advances in Internal Medicine: Edited by J. Murray Steele, M. D. New York, Interscience Publishers, Inc., 1942. Pp. 292. Price, $4.50.

This is a perfectly splendid "informal summary" of recent progress in the field of internal medicine. The book is under the editorial control of Dr. J. Murray Steele and associated with him is a group of seven of the outstanding internists of the United States.

The list of contents includes subjects in which there have been distinct advances in the past few years. There is an article on the Miller-Abbott tube, another on the use of insulin and protamine insulin in the management of the diabetic patient, two on the sulfonamides, one on the infections of the urinary tract and a very splendid contribution on the sympathetic nervous control of the peripheral vascular system. The articles on epidemic infections, nephrosis and riboflavin deficiency are most instructive and well presented. A comment should be made also on the elucidating article by Page and Corcoran on hypertension, the experimental work of which the former has guided and led, and which is summarized in a clear and orderly fashion. This review by Page is well worth the attention not only of the internist but of every physician who comes in contact with the hypertensive patient.

Interscience Publishers are to be congratulated on this volume, one of a series of books which will bring the busy doctor up to date in the several branches of medicine and more particularly the special fields in which he is not always able to keep up with current medical literature, that is in the realms outside of a man's particular specialty in medicine.

J. H. MUSSER, M. D.

Mental Illness: A Guide for the Family: By Edith M. Stern, with the collaboration of Samuel W. Hamilton, M. D. New York, Commonwealth Fund, 1942. Pp. 134. Price, $1.00.

This book fulfills a specific, long existent need. It serves to shape the thinking families who must meet the problem of mental disorder, and decide upon treatment, hospitalization, convalescence and re-socialization.

Mrs. Stern has drawn from her experience with patients, their families, their physicians, and her knowledge of circumstances as they exist, in contradistinction to the ideal, the material with which to write this book; yet she has written it with a constructive, mellow, realistic attitude.

Every physician should have this book on his desk and bring it to the attention of relatives who are bewildered, distressed and uninformed, but none the less must make decisions about some member of their families. The reviewer cannot recommend the book too highly.

T. A. WATTERS, M. D.

Clinical Anesthesia: By John S. Lundy, B. A., M. D. Philadelphia, W. B. Saunders Co., 1942. Pp. 771. Price, $9.00.

The need for an up-to-date book on anesthesia has existed for some time. The appearance of *Clinical Anesthesia* by John S. Lundy, is therefore a timely one.

Anesthesia has made many rapid strides in the last ten years in the introduction of new drugs and technics of administration. Dr. Lundy describes these currently used drugs and technics in his book. Regional, spinal, and local infiltration technics for various types of operations are described in the first third of the book. Inhalation, and rectal, and intravenously-administered drugs and technics are the concern of the remainder of the book. Intravenous fluid therapy and inhalation therapy are also discussed.

Dr. Lundy has made no attempt to review the entire literature of anesthesia but has compiled the subject matter mostly from his own experiences and his associates' at the Mayo Clinic. The volume is very well illustrated.

The book will be of interest to physicians who are preparing themselves for anesthesiology.

JOHN ADRIANI, M. D.

The Hospital Care of the Surgical Patient: A Surgical Handbook. By George Crile, Jr., M. D., and Franklin L. Shively, Jr., M. D. Springfield, Ill., Chas. C. Thomas Co., 1943. Pp. 184. Price, $2.50.

Evarts Graham in his foreword establishes the position of this one hundred and eighty-four page book, "Hospital administrators and chiefs of surgical services will find it profitable to recommend it to their surgical house staffs." In the preface the authors state their purpose which briefly is to standardize routine hospital procedures and principles of preoperative and postoperative care as applicable at Cleveland Clinic Hospital. The reviewer is impressed with the need for such a publication and the sincerity of the authors.

Many of our well managed hospitals have an equivalent compilation, usually mimeographed and annually revised, varying in authenticity, which in such individual instances is better applicable to their situation. However, most institutions do not find such an arrangement possible; these and our many smaller hospitals will do well to add this small volume to their interne library.

A glance at the table of contents illustrates the reference ease. The physiology of fluid balance is covered without mystification. Complications to surgery are nicely handled. Technic of routine hospital procedures are outlined and are, in most instances, of universal application.

The section dedicated to the relationships of the house officer is a well presented treatise on hospital psychology and ethics. This portion of the book alone will be profitable reading for any interne.

The authors in their departure from surgery into the realms of medical complications occurring in a surgical patient have not handled the situation well. Many a cardiologist will question the use of intravenous aminophyllin for coronary occlusion. The criteria of diagnosing uncomplicated pneumonitis by its response to the sulfonamide preparations is not well accepted.

In addition to this criticism one finds a void of incompleteness in that many of the surgical specialties in which the house staff care is essential are not considered. The care of ileostomies and colostomies is superficially mentioned relegating this most important subject to nursing care. The use of protein powders, where aluminum paste fails, deserves mention.

Here and there the reviewer finds a suggestion he questions such as the use of saline purgation in the preparation for colonic surgery; perforation in malignancies might thereby be produced and such should therefore be practiced with a little more reservation.

Admittedly hypercritical, I bring attention to deficiencies of this work. Its qualifications are more apparent, it is an exemplary aid to any hospital house officer; as such it will be well accepted and serve its purpose well.

GORDON MCHARDY, M. D.

Care of the Aged (Geriatrics): By Malford W. Thewlis, St. Louis, C. V. Mosby Co., 1942. Pp. 589. Price, $7.00.

Because the present state of affairs must of necessity include the aging in the framework of totalitarian war and since the future envisions a nation of elders, the study of the aging, or geriatrics, has assumed a position of prime importance among physicians. In a field that has as yet been comparatively little investigated and in which modern factual data are still punctuated by large areas of no or at best impressionistic ideas, uncorroborated by scientific proof, books on the subject of geriatrics are noteworthy by their fewness. But these few are quite good and among the best is this fourth edition of Thewlis, first published in 1919. It is really an excellent addition to the armamentarium of the geriatrician and one senses that in the years to come when the study of the senescent shall grow in importance and value, it will be found both elementary and in great part erroneous. This should not be chalked up to the discredit of the author. He can only record the wisdom of the day and add to it the results of his clinical experience. It is well worth reading and employing in treating the oldsters. His style is lovely and he has correctly sensed the broad outlines essential in warding off the ravages of time and place and living to the full despite the handi-

caps bestowed by age on the senescent and senile organism. The author roams over a wide field in his discussion, delving into the economic, legal, social, and medical aspects of longevity. The book format and index are good. All in all, Thewlis has made a worthwhile revision to a subject growing in importance by leaps and bounds.

I. L. ROBBINS, M. D.

The Anatomy of the Nervous System: By S. W. Ranson, M. D., Ph. D. 7th Ed. Philadelphia, W. B. Saunders Company, 1943. Pp. xxi + 520, figs. 408. Price, $6.50.

Favorably received since its first publication in 1920, the present seventh edition of this work on neuroanatomy calls for no detailed description. It is a superior text-book, noteworthy for close correlation of structure and function, lucid style and abundance of excellent illustrations.

The revision was completed shortly before the death of the distinguished author. The publisher's foreword announces that Doctor Ranson had arranged for revision of the book, in the event of his decease, by Doctor Sam L. Clark. The future of the text is therefore assured, and an ably revised eighth edition may be expected in due time.

The current edition is an improvement over its predecessors. Before preparing it the author solicited suggestions from teachers of neuroanatomy, and these suggestions have been followed insofar as was feasible. One of the author's prefatory comments in this connection is of particular significance: "It has not been possible to comply with the many requests for a fuller discussion of the extrapyramidal motor paths. These requests must be regarded as a challenge to research. Very little is known on this subject and some ideas which have been generally accepted are certainly fallacious." At many points physiological considerations are amplified. The sections most extensively revised concern cerebellum, thalamus, hypothalamus, cerebral cortex and sympathetic nervous system. With regard to the last, and the related discussion of components of craniospinal nerves, the unfortunate terminology of "general" and "special" visceral efferents is retained. Illustrations of the sheep's brain, formerly scattered in the body of the text, are now brought together in the back—a distinct benefit to users of the book whose study is confined to the human brain.

HAROLD CUMMINS, Ph. D.

PUBLICATIONS RECEIVED

Lea & Febiger, Philadelphia: A Manual of Otology, Rhinology and Laryngology, by Howard Charles Ballenger, M. D., F. A. C. S. Urine and Urinalysis, by Louis Gershenfeld, B. Sc., P. D., Ph. M., D. Sc.

Charles C. Thomas, Springfield, Illinois: A Manual of Pulmonary Tuberculosis (Part 1) and an Atlas of Thoracic Roentgenology (Part II), by David O. N. Lindberg, M. D., F. A. C. P. Physiology in Aviation, by Chalmers L. Gemmill, B. S., M. D., Commander, MC, USNR, with a chapter on Instrument Flight by Lieutenant Frederick B. Lee, USNR.

The Jaques Cattell Press, Lancaster, Pa.: Physiological Regulations, by Edward F. Adolph. Biological Symposia, edited by Jaques Cattell, Volume IX, Sex Hormones.

The Peter Reilly Co., Philadelphia: War Injuries of the Chest, edited by H. Morriston Davies, M. Ch., F. R. C. S. and Robert Coope, M. D., F. R. C. P.

Research Publishing Company, Chicago and Los Angeles: Fundamentals of Endocrinology and Practical Endocrinotherapy, by Dr. Max R. Rubinstein.

The Commonwealth Fund, New York: Clinical Significance of the Blood in Tuberculosis, by Gulli Lindh Muller, M. D.

The MacMillan Company, New York: Hope Deferred, by Jeanette Seletz.

Alfred A. Knopf, New York: Man in Structure and Function, Volumes I and II, translated from the German and edited by George Rosen, M. D.

The Louisiana Historical Quarterly: Charles Aloysius Luzenberg, 1805-1848: A History of Medicine in New Orleans during the Years 1830 to 1848, by A. E. Fossier, M. D., Vol. 26, No. 1, January, 1943.